INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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VIA CERTIFIED MAIL 7002 0510 0004 2581 9682

August 25, 2005

Mr. Matthew A. Love
Director, Environmental Affairs
Exide Technologies
3000 Montrose Avenue
Reading, Pennsylvania 19605

Dear Mr. Love:

Re: Soil Delineation Concentrations
Refined Metals Corporation
Beech Grove, Indiana
EPA I.D. No. IND000718130

The Indiana Department of Environmental Management (IDEM) has reviewed Proposed Soil Delineation Concentrations, dated July 18, 2005, for the Refined Metals facility in Beech Grove, Indiana. This information was provided in response to IDEM's February 14, 2005 letter.

The proposed 400 mg/kg soil delineation level is acceptable based on Refined Metals' demonstration that lead is not leaching to ground water. If you have any questions regarding this matter, please call (800) 451-6027, press 0, and ask for Ms. Ruth Jean at extension 2-3398, or call 317/232-3398, or e-mail at **rjean@idem.in.gov**.

Sincerely,

Victor P. Windle, Chief
Hazardous Waste Permit Section
Permits Branch
Office of Land Quality

raj
cc: Paul G. Stratman, Advanced Geoservices Corporation
Jonathan Adenuga, U.S. EPA, Region 5
Mike Anderson, IDEM
Marty Harmless, IDEM
Jim Caylor, IDEM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

February 18, 2003

REPLY TO THE ATTENTION OF

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

Phase II RCRA Facility Investigation Report
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the May 2002, Phase II RCRA Facility Investigation (RFI) report for the Refined Metals Corporation. The report is approved. The facility is now required to proceed with the Corrective Measure Study as stipulated in the August 1998 Consent Decree. If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

cc: John Koehnen, Techlaw Inc.,
cc: Douglas Griffin, IDEM
cc: Rebecca Joniskan

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February 4, 2003 2003-1046-00

Mr. Jonathan Adenuga
Corrective Action Center
USEPA Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Response to EPA Comment Letter dated December 31, 2002
Refined Metals Facility
Beech Grove, IN
IND 000 718 130

Dear Mr. Adenuga:

Advanced GeoServices Corp. (AGC), on behalf of Exide Technologies, is pleased to offer the following responses to the USEPA comment letter dated December 31, 2002 regarding Revision 1.0 of the RCRA Facility Investigation Report, dated May 3, 2002. As suggested by the EPA, AGC has modified the appropriate text, figures, and Table of Contents instead of revising the entire document. The USEPA comments are reproduced in bold type and report modifications are described below. The comments are numbered to correspond to the December 31, 2002 USEPA comment letter. Corrected pages are attached for insertion into Revision 1.0 of the Phase II RFI report. Comments that did not require a response have not been reproduced here. Activities involving access to off-site properties described in AGC's November 13, 2002, correspondence to the EPA are proceeding.

Comment 5: <u>Section 7.0, Conclusions, Page 35:</u>

As stated in the recommendations section, groundwater flow patterns toward the northeast remains partially defined. However, the changes to the text in the section do not accurately describe the shallow groundwater conditions as observed from the available water level information. The potentiometric maps presented in Figures 5-1 and 5-2 indicate that there is a component of groundwater flow to the northeast along the eastern property boundary and to the east or south along the southwestern property boundary. There does not appear to be evidence that shallow groundwater "flows radially toward the northeast through the southeast" as stated in the revised text. Revise the first bullet in Section 7.0 under the groundwater heading to clarify the interpretation of the shallow groundwater flow conditions.

Response: The first bullet in Section 7.0 under the groundwater heading has been revised to clarify the interpretation of shallow groundwater flow. The corrected text is attached. The proposed additional piezometers and wells will assist in a more precise interpretation of shallow groundwater flow.

Comment 6: Section 7.0, Groundwater, Page 35, Bullet #2 & #3:

If the issue in this section is a clarification on the protection standards applicable to groundwater data collected at RMC facility, we refer RMC to the U.S. EPA's Safe Drinking Water Act (SDWA) section 1412 (b) (4). The applicable protection standards are MCLs when established by U.S. EPA. MCLs are based upon unfiltered (totals) groundwater data. Therefore, unfiltered groundwater are representative of the groundwater condition at the RMC facility. Also, the conclusion in bullet #3 is not quite accurate. As was indicated in U.S. EPA's previous comment, arsenic concentrations reported in monitoring wells #1, #2, #3, #7, and #8 were all above the established background values and are not representative of regional background. Revise the report accordingly.

Response: The information provided by AGC regarding the filtered and unfiltered groundwater samples was intended as a technical discussion of site conditions and not as an interpretation of the Safe Drinking Water Act (SDWA). We acknowledge that, for the purposes of evaluating RFI data, the protection standards applicable to facility groundwater are MCLs established by the EPA and that unfiltered results are to be used to assess attainment. Section 7.0 is not an attempt to use filtered results to assess attainment. Rather, it is an evaluation of the representativeness of actual groundwater conditions by unfiltered samples. Contrary to EPA's comment, it is possible that unfiltered results may not be as representative as possible of actual groundwater conditions for a variety of reasons (e.g., incorrect well installation, incomplete well development, errors in sampling technique, etc.). Filtered data provides a check as to the representativeness of the unfiltered samples.

With respect to arsenic, AGC concurs that arsenic levels in MW-1, MW-2, MW-3, MW-7 and MW-8 were above the background concentration calculated using data from MW-9. The additional wells and sampling proposed in Section 8.0 will be used to further define a background arsenic concentration.

Comment 7: **Section 7.0, Soils, Page 35, Bullet #2:**

Please refer to the 2002 region 9 Preliminary Remediation Goals (PRGs) table that includes an industrial soil value of 750 milligrams per kilogram (mg/kg) for lead and your corresponding isopleth line on Drawing 6-1. Revise the report accordingly.

Response: Drawing 6-1 has been revised by replacing the 1,000 mg/kg isopleth with the 750 mg/kg isopleth. The revised drawing is attached. The primary effect of the revision was to extend the isopleth to the west, encompassing more of the Citizens Gas property. Also, the reference to the drawing in section 6.2.2, Off-Site Soil, on page 34 of the report text has been corrected and is attached.

Comment 8: **Section 7.0 Conclusions, Page 37, Bullet 1:**

The text states, "Arsenic and lead affected soil has also been identified and largely delineated to be within the site boundaries to be below both applicable PRGs and/or background..." This conclusion needs clarification and it also contradicts the statement in Section 6.2.1, Page 33. Revise the RFI to clarify this conclusion.

Response: The conclusion has been clarified to remove the inference that arsenic and lead affected soil within the site boundary is below background and/or PRG concentrations. The conclusion has been reworded to state that the majority of soil with exceedences of the background or PRG concentrations is contained within the site boundaries or on the eastern portion of the Citizens Gas property. The conclusion also acknowledges that affected soil may have been transported in drainage features by storm events. The proposed off-site sampling included in Section 8.0 will assist in the delineation of affected soil in the rail road right-of-way and along Arlington Avenue. The modified text is attached.

Comment: **Interim Measures:**

The response provided by RMC is not adequate. U.S. EPA's Guidance for RCRA Facility Investigations (OSWER Directive 9502.00-6D, May 1989) indicates reports on the interim corrective measures may be required. Consequently, the Revised RFI Report should include a section on the interim measures that were installed. At a minimum this section should include a description of the interim measures installed, dates of installation, any as-built drawings, and an evaluation of the their effectiveness. Revise the RFI Report to include a section on the Interim Measures.

Response: Section 9.0, Interim Measures, has been expanded to include information on the installation of the check dams and silt fence along the rail spur on the northern boundary of the site. Variances from the Work Plan are described. Two additional figures have been added to the report to depict the check dam detail and as-built configuration. The Table of Contents has been modified to include the additional drawings. The drawings and modified text are attached.

If you have questions or require additional information, please call the undersigned at 610-558-3000. We look forward to moving forward with this project.

Sincerely,

ADVANCED GEOSERVICES CORP

J. Stuart Wiswall
Associate Project Consultant

Paul G. Stratman, P.E.
Project Manager

JSW:PGS:vm

Enclosures

cc: M. Love, Exide Technologies

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

December 31, 2002

REPLY TO THE ATTENTION OF:

DE-9J

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

Revision 1.0 Phase II RCRA Facility Investigation Report
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed review of the response and the Revision 1.0 of the May 3, 2002 Phase II RCRA Facility Investigation Report for the Refined Metals Corporation (RMC). The U.S. EPA agrees with the conclusion that progression into the corrective measures study is warranted. However, certain issues in the RFI report and more importantly some of the conclusions must be addressed before embarking on the corrective measures phase. In order to expedite the process, the U.S. EPA will tentatively approve the report contingent upon RMC fully addressing the comments in the enclosed attachment. In the enclosed attachment, U.S. EPA's comments that need not be further addressed have been indicated. Those outstanding issues that must be addressed are also outlined. These outstanding issues must be addressed before moving forward. If feasible, the entire RFI report need not be revised, if the revised pages can be inserted into to the appropriate sections of the document to be submitted for review and final approval. The revised pages/ RFI report must be submitted to U.S. EPA within 30 days of receipt of this letter.

If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

Jonathan Adenuga
Corrective Action Section

Enforcement Compliance Assurance Branch

cc: John Koehnen, Techlaw Inc.,
Douglas Griffin, IDEM
Rebecca Joniskan

ATTACHMENT

1. **Section 4.0, Introduction, Page 16:** *The second paragraph indicates that 22 sediment samples were collected in August, 2001. However, Section 4.4.2.2 and Table 5-3 both indicate that only two samples were collected at ten locations, for a total of twenty samples. Revise the RFI Report to resolve this discrepancy.*

U.S. EPA Response: The response provided by RMC appears to be adequate.

2. **Section 4.4.2.4, Offsite Sediment Sampling:** *The text states that the AGC were unsuccessful in their attempts to gain access to a drainage at the northern property line of the facility to collect sediment samples. Provide evidence such as correspondence, telephone logs etc., between RMC and the land owner to show that such attempts were made. Refer to paragraph 88 of the Consent Decree that specifically outlined the obligations of RMC to secure access to property not owned by RMC.*

U.S. EPA Response: The response provided by RMC appears to be adequate.

3. **Table 4-1, Monitoring Well Construction Details:** *Table 4-1 includes the depth to water as measured in feet bgs. Generally this measurement would be reported as the depth below the measurement point (e.g. top of casing). The groundwater elevations shown on Figure 5-1 are not consistent with the calculated elevations based on Table 4-1. Neither the TOIC elevation nor the ground surface elevation, minus the depth to water, yields the elevations shown on Figure 5-1. Revise Table 4-1 and/or Figure 5-1 to include the correct depth measurements and water table elevations.*

U.S. EPA Response: The response provided by RMC appears to be adequate.

4. **Drawing 4-2, Sediment Sample Locations:** *This drawing lists both a triangle and a checkered square symbol in the legend to represent surveyed sample locations. However, the checkered square symbols do not have any labels associated with them, making it difficult to determine what these sample locations represent. Revise the drawing to include clear labeling for all sample locations.*

U.S. EPA Response: The response provided by RMC appears to be adequate.

5. **Section 7.0, Conclusions, Page 35:** *The first conclusion for groundwater states that "Groundwater flow in the shallow zone of saturation on-site appears to be generally toward the southeast." Figures 5-1 and 5-2 indicate that there may be a groundwater mound on or near the site creating areas where there also appears to be a flow to the east and northeast. This is supported by metals concentration data which show the highest concentrations of lead*

and arsenic in the northernmost wells at the site. Revise the conclusion regarding groundwater flow to include discussion of the various groundwater flow directions at the site.

U.S. EPA Response: As stated in the recommendations section, groundwater flow patterns toward the northeast remains partially defined. However, the changes to the text in the section do not accurately describe the shallow groundwater conditions as observed from the available water level information. The potentiometric maps presented in Figures 5-1 and 5-2 indicate that there is a component of groundwater flow to the northeast along the eastern property boundary and to the east or south along the southwestern property boundary. There does not appear to be evidence that shallow groundwater "flows radially toward the northeast through the southeast" as stated in the revised text. Revise the first bullet in Section 7.0 under the groundwater heading to clarify the interpretation of the shallow groundwater flow conditions.

Groundwater

6. **Section 7.0, Groundwater, Page 35, Bullet #2 & #3:** *We disagree with the comments that lead concentration above Action Level, by total metals analysis appear to be the result of entrained soil in the samples and arsenic values above background values are representative of regional background, because it is somewhat misleading. Although, RMC did not fully identify the purpose of filtering groundwater samples prior to analysis, the premise of this conclusion is that filtration works only for lead ("yields lead values below Action Level") and does not work for arsenic. Therefore, since the filtration did not reduce arsenic concentration, the reported varied arsenic concentrations in onsite monitoring wells and detected above established background values are therefore representative of regional background. We fail to see the logic in this type of interpretation. The filtration process should not selectively reduce metal concentration. If it reduces the concentration of lead then it should reduce the concentration of arsenic. The concentration of arsenic detected in onsite monitoring wells are either below or above the established background values. In this instance, the arsenic concentrations reported in Monitoring wells #1, #2, #3, #7 and #8 were all above the established background values and are therefore, not representative of regional background.*

Also based on the data presented, there appears to be a correlation between the arsenic detected in monitoring wells #1, # 2, # 7 and #8 and soil samples collected from the vicinity of these wells. This is an indication that the arsenic reported in these onsite wells are due to impact from previous site operations.

U.S. EPA Response: If the issue in this section is a clarification on the protection standards applicable to groundwater data collected at RMC facility, we refer RMC to the U.S. EPA's Safe Drinking Water Act. (SDWA) section 1412 (b) (4). The applicable protection standards are MCLs when established by U.S. EPA. MCLs are based upon unfiltered (totals) groundwater data. Therefore, unfiltered groundwater are representative of the

groundwater condition at the RMC facility. Also the conclusion in bullet #3 is not quite accurate. As was indicated in U.S. EPA's previous comment, arsenic concentrations reported in monitoring wells #1, #2, #3, #7 and #8 were all above the established background values and are not representative of regional background. Revise the report accordingly.

Soils

7. **Section 7.0, soils, Page 35, Bullet #2:** *The U.S. EPA's risk-based threshold for lead in soils is 750mg/kg. Data collected for both phase I, closure investigations and phase II, demonstrate clearly that the lead in onsite soils are well above this threshold. Therefore, this conclusion is unacceptable.*

U.S. EPA Response: Please refer to the 2002 region 9 Preliminary Remediation Goals (PRGs) table that includes an industrial soil value of 750 milligrams per kilogram (mg/kg) for lead and your corresponding isopleth line on Drawing 6-1. Revise the report accordingly.

8. **Section 7.0 Conclusions, Page 37, bullet 1:** *The text states "Arsenic and lead affected soil has also been identified and largely delineated to be within the site boundaries to be below both applicable PRGs and/or background..." This conclusion needs clarification and it also contradicts the statement in Section 6.2.1, Page 33.* **Revise the RFI to clarify this conclusion.**

Interim Measures

The following information needs to be provided on the completed Interim Measures at the RMC facility. Such as "As-Built Diagram", why interim measures were implemented, the adequacy of the interim measures, suggested modifications, and are the measures accomplishing their intended purpose. Any recommendations that you have will be helpful in verifying whether the Interim Measures plan was adequately followed.

U.S. EPA Response: The response provided by RMC is not adequate. U.S. EPA's Guidance for RCRA Facility Investigations (OSWER Directive 9502.00-6D, May 1989) indicates reports on the interim corrective measures may be required. Consequently, the Revised RFI Report should include a section on the interim measures that were installed. At a minimum this section should include a description of the interim measures installed, dates of installation, any as-built drawings, and an evaluation of the their effectiveness. Revise the RFI Report to include a section on the interim measures.

Data

The data qualifiers listed in the analytical results tables do not appear to be consistent with the information contained in the DVRs. For example, according to the DVR sample R2SB-7A should be qualified as estimated (J) for lead only. However, in Table 5-2 this sample is qualified J for

both lead and arsenic. In addition, the DVR indicates that the arsenic result for sample R2SB-11A should be qualified J. However, Table 5-2 does not include a qualifier for the arsenic result in this sample. Sample R2SB-10B is another example. The DVR does not indicate that this sample should be qualified J. However, Table 5-2 has both the arsenic and lead results in this sample qualifying them as J. Clarify these apparent discrepancies. Also, ensure that all data qualifiers are discussed in the text of the DVR. Finally, ensure that all data qualifiers discussed in the text of the DVRs are correctly applied to the analytical data tables.

U.S. EPA Response: The response provided by RMC appears to be adequate.

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November 18, 2002 98-478-03

Mr. Jonathan Adenuga
Region 5 Corrective Action Section
Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Phase II RCRA Facility Investigation Report
Response to Comments
IND 000 718 130

Dear Mr. Adenuga:

On behalf of Refined Metals Corporation, Advanced GeoServices Corp. (AGC) submits the following response to comments for the Phase II RCRA Facility Investigation Report dated May 3, 2002. The comment letter provided by USEPA was dated September 9, 2002. The Phase II RCRA Facility Investigation Report has been revised (Revision 1.0) and is enclosed.

USEPA COMMENTS

Comment: **Section 4.0, Introduction, Page 16: The second paragraph indicates that 22 sediment samples were collected in August, 2001. However, Section 4.4.2.2 and Table 5-3 both indicate that only two samples were collected at ten locations for a total of twenty samples. Revise the RFI Report to resolve this discrepancy.**

Response: This typographical error has been addressed. The revised text has been inserted on page 16 of Revision 1.0.

Comment: **Section 4.4.2.4, Offsite Sediment Sampling: The text states that AGC was unsuccessful in their attempts to gain access to a drainage ditch at the northern property line of the facility to collect sediment samples. Provide evidence such as correspondence, telephone logs etc. between RMC and the land owner to show that such attempts were made. Refer to paragraph 88 of the Consent Decree that specifically outlined the obligations of RMC to secure access to property not owned by RMC.**

Response: AGC did not send requests for access by certified mail, return receipt requested. The owner of the Firestone property, Prologis Trust, was contacted by repeated phone calls and a formal written request but did not respond. Identifying the owner of the rail road right-of-way was delayed by the break up of Conrail. By the time AGC determined the appropriate party was CSX, there was insufficient time to complete the CSX application and review process. AGC has resumed pursuit of access for these two properties and will be issuing certified letters to document their delivery.

Comment: **<u>Table 4-1, Monitoring Well Construction Details:</u> Table 4-1 includes the depth to water as measured in feet bgs. Generally this measurement would be reported as the depth below the measurement point (e.g. top of casing). The groundwater elevations shown on Figure 5-1 are not consistent with the calculated elevations based on Table 4-1. Neither the TOIC elevation nor the ground surface elevation minus the depth to water yields the elevations shown on Figure 5-1. Revise Table 4-1 and/or Figure 5-1 to include the correct depth measurements and water table elevations.**

Response: Based on a review of the table, the comment is correct. Upon further examination it has been determined that the depth-to-water measurements were in fact collected from the top of the inside casing. However, the TOIC elevations listed on Table 4-1 for Wells 1 through 5 were actually top of outside casing elevations. Table 4-1 has been corrected to reflect the actual TOIC elevations and the correct reference point for depth-to-groundwater measurements. In addition a column has been added for water table elevations based on the TOIC and depth-to-water measurements. Figure 5-1 has been modified to reflect the corrected groundwater table elevations. It was also determined that the same TOIC elevations were used in preparing Figure 5-2. The groundwater table elevations for MW-1 through MW-5 have been revised on Figure 5-2 as well. Both corrected figures have been included in Revision 1.0. AGC notes that the corrections to these maps do not substantially change the groundwater flow direction. A review of previous levels submitted for the Phase I RFI indicates that those levels were calculated correctly.

Comment: **<u>Drawing 4-2, Sediment Sample Locations:</u> This drawing lists both a triangle and a checkered square symbol in the legend to represent surveyed sample locations. However, the checkered square symbols do not have any labels associated with them, making it difficult to determine what these sample locations represent. Revise the drawing to include clear labeling for all sample locations.**

Response: Drawing 4-2 has been revised to include sample identification for the checkered square symbols. The corrected figure is included in Revision 1.0.

Comment: **<u>Section 7.0, Conclusions, Page 35:</u> The first conclusion for groundwater states that "Groundwater flow in the shallow zone of saturation on-site appears to be generally toward the southeast." Figures 5-1 and 5-2 indicate that there may be a groundwater mound on or near the site creating areas where there also appears to be flow to the east and northeast. This is supported by metals concentration data which show the highest concentrations of lead and arsenic in the northernmost wells at the site. Revise the conclusion regarding groundwater flow to include discussion of the various groundwater flow directions at the site.**

Response: The text has been revised to indicate that groundwater flow in the shallow zone is towards the southeast and northeast and is included in Revision 1.0.

<u>Groundwater</u>

Comment: **<u>Section 7.0, Groundwater, Page 35, Bullet #2 & #3:</u> We disagree with the comments that lead concentration above Action Level by total metals analysis appear to be the result of entrained soil in the samples and arsenic values above background values are representative of regional background, because it is somewhat misleading. Although, RMC did not fully identify the purpose of filtering groundwater samples prior to analysis, the premise of this conclusion is that filtration works only for lead ("yields lead values below Action Level") and does not work for arsenic. Therefore, since the filtration did not reduce arsenic concentration, the reported varied arsenic concentrations in onsite monitoring wells and detected above established background values are therefore representative of regional background. We fail to see the logic in this type of interpretation. The filtration process should not selectively reduce metal concentration. If it reduces the concentration of lead then the concentration of arsenic should also be reduced. The concentration of arsenic detected in onsite monitoring wells are either below or above the established background values. In this instance, the arsenic concentrations reported in Monitoring wells #1, #2, #3, #7 and #8 were all above the established background values and are therefore, not representative of regional background.**

Also based on the data presented, there appears to be a correlation between the arsenic detected in monitoring wells #1, #2, #7 and #8 and soil samples collected from the vicinity of these wells. This is an indication that the arsenic reported in these onsite wells are due to impact from previous site operations.

Response: We stand by our conclusion that entrained sediment in the unfiltered water sample is the source of lead in the total samples. There can be no other conclusion based on the fact that, without exception, the concentration of lead in the filtered sample was significantly reduced from that of the unfiltered sample. AGC notes that in all cases where total (unfiltered) lead results exceeded the Action Level, the corresponding filtered sample yielded lead concentrations below the Action Level.

The reviewers comment regarding that the filtering works for lead and not arsenic is unclear. The discussion of arsenic in the second bullet is not intended to be misleading, but to emphasize the fact that unlike lead, arsenic is occurring in either a dissolved or <45 micron state, otherwise it would not be found in the filtered sample. The effect of filtering on an aqueous sample is dependent upon how a particular parameter is occurring in the sample, therefore, it is possible for filtering to remove lead adhering to a soil particle while allowing dissolved arsenic to pass.

The statement contained in the third bullet is intended to emphasize that background condition for groundwater are currently not well defined (one well with two rounds of sampling data). The wording for this bullet has been revised to be less conclusive and simply emphasize that more information will help further define contribution of site operations to arsenic in groundwater relative to regional arsenic concentrations in groundwater.

Comment: **<u>Section 7.0, soils, Page 35, Bullet #2:</u> The U.S. EPA's risk-based threshold for lead in soils is <u>750 mg/kg</u>. Data collected for both phase I, closure investigations and phase II demonstrate clearly that lead in onsite soils are well above this threshold. Therefore, the conclusion is unacceptable.**

Response: The screening level identified in the RFI Work Plan for lead in soil in non-residential properties is 1,000 mg/kg (the Region IX PRG, 1998). The results of soil sampling allows delineation of the 1,000 mg/kg iso-concentration line within the site boundary towards the south, east and north with only a handful of exceptions. The common boundary with Citizens Gas still exceeds 1,000 mg/kg and therefore the 1,000 mg/kg iso-concentration line would extend across the western property line. For these

reasons, this statement is considered accurate. The extent of lead affected soil above the 1,000 mg/kg PRG is indicated by the isopleth line on Drawing 6-1.

Interim Measures

Comment: **Provide additional information on the completed Interim Measures at the RMC facility. Information such as "As-Built Diagram", why interim measures were implemented, adequacy, suggested modifications, are the measures accomplishing its intended purpose, recommendations etc. will be helpful in verifying whether the Interim Measures plan was adequately followed.**

Response: The interim remedial measures were installed in September 2001 in accordance with the EPA-approved Interim Remedial Measures (IRM) Work Plan. The interim measures consisted of the installation of four check dams and associated silt fence along the railroad spur north of the site. These features were installed to control potential migration of lead contaminated sediment in the drainage ditch along the rail road track at the north end of the site. These features have been inspected and have been found to be operating as intended. No modifications to the IRM are recommended.

Data

Comment: **The data qualifiers listed in the analytical results tables do not appear to be consistent with the information contained in the DVRs. For example, according to the DVR sample R2SB-7A should be qualified as estimated (J) for lead only. However, in Table 5-2 this sample is qualified J for both lead and arsenic. In addition, the DVR indicates that the arsenic result for sample R2SB-11A should be qualified J. However, Table 5-2 does not include a qualifier for the arsenic result in this sample. Sample R2SB-10B is another example. The DVR does not indicate that this sample should be qualified J. However, Table 5-2 has both the arsenic and lead results in this sample qualified J. Clarify these apparent discrepancies. Also, ensure that all data qualifiers are discussed in the text of the DVR. Finally, ensure that all data qualifiers discussed in the text of the DVRs are correctly applied to the analytical data tables.**

Response: EPA has requested AGC check the consistency between the Data Validation Reports (DVRs) and the analytical data tables. AGC concurs with the EPA opinion that there are discrepancies between the DVR and the analytical data tables for the Sample Delivery Group (SDG) Number 35132-30 (Trimatrix Laboratories, Inc.). All other

DVRs have been reviewed and compared to the analytical data tables with no discrepancies between them. EPA also requests that AGC ensure that all data qualifiers are discussed in the text of the DVRs. AGC has appended the DVR for SDG Number 35132-30 with the necessary information. The following corrections have been made to the DVR for SDG Number 35132-30, located in Appendix B "Data Validation Report of Soil Samples Collected on August 21-27, 2001":

1. The cover page of the report has been updated to include the date of the recent corrections. Attached cover page replaces previous cover page.
2. The first sentence on the second page of text in the report has been updated to clarify the criteria for qualifying results due to blank contamination. Attached page replaces previous page.
3. The last sentence on the third page of text has been updated to indicate that *all* samples associated with those that exceed serial dilution criteria are qualified as estimated. Attached page replaces previous page.
4. The final page of text in the DVR, Validation Summary, has been updated to reflect the date on which the above corrections were made. Attached page replaces previous page.
5. The first page of the supporting documentation, Inorganic Data Validation Summary, has been appended with more detail regarding the reasons behind the qualifications. Attached page replaces previous page.
6. Pages 77 through 95, page 97, pages 102 through109, pages 119 through 149, and page 161 of the "Form 1's" in the supporting documentation have been updated to reflect the qualifier changes outlined in the text section of the DVR. Attached pages replace previous pages.
7. The serial dilution worksheet near the end of the supporting documentation has been updated to include associated samples. Attached page replaces previous page.
8. A data validation summary table, used to QA AGC's database entry process has been attached as support documentation for the DVR.
9. Tables 5-2 and 5-3 have been updated to include the qualifier changes outlined in the text and supporting documentation of the DVR for SDG Number 35132-30. All qualifiers in the DVRs are consistent with those on the analytical data tables.

If you have any questions, or require additional information, please call me at (610) 675-2122. We look forward to moving forward with this project.

Sincerely,

ADVANCED GEOSERVICES CORP

Paul G. Stratman, P.E.
Senior Project Consultant

PGS:vm

Enclosure

cc: Matthew Love (Exide)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

DE-9J

SEP 09 2002

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

Phase II RCRA Facility Investigation Report
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the May 3, 2002 Phase II RCRA Facility Investigation Report for the Refined Metals Corporation (RMC). Although the report was generally satisfactory, the RFI Report does not include discussion of planned or recommended future actions at the site. It is unclear from the RFI Report whether any additional investigation is proposed to focus specifically on a remedial approach or whether RMC plans to perform risk assessment necessary for a Corrective Measures Study. Given the extent of the vertical and horizontal delineation of contamination at the site, we believe that additional delineation sampling will need to be considered before an adequate evaluation of risk can be performed. The RFI Report must be revised to provide recommendations for the next step(s) in the process.

For example, (a) numerous samples collected from ditches adjacent to or within the site had lead and arsenic above, sometimes significantly above, the associated PRG and background values (b) lead was detected above the Action Level in all three monitoring wells in the northern portion of the site. Arsenic was also detected in these wells above the calculated background, and (c) soil samples were not collected in the railroad right-of-way and sediment samples were not collected in the ditch along Arlington Avenue due to ongoing construction. An issue of great importance that was given the least attention in this report are the interim measures activities that were required to be implemented by RMC. The report merely states that interim measures were implemented and they in place. No further information was provided on this activity.

Furthermore, we strongly suggest that additional interpretation of the soil and groundwater data would be useful in delineating the extent of contamination. For instance, it would be helpful to either contour or map the locations where arsenic or lead concentrations were above their associated background or PRG value. This would more clearly illustrate the extent of contamination or any areas where additional characterization may be necessary. Other important issues in the report that need to be addressed were also noted. The enclosed attachment contain comments regarding specific issues in the report that must be addressed prior to approving the final report. The revised report addressing all comments must be submitted to the U.S. EPA within 30 days of receipt of this letter and attachment.

If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

cc: John Koehnen, Techlaw Inc.,
Douglas Griffin, IDEM
Rebecca Joniskan

ATTACHMENT

1. **Section 4.0, Introduction, Page 16:** The second paragraph indicates that 22 sediment samples were collected in August, 2001. However, Section 4.4.2.2 and Table 5-3 both indicate that only two samples were collected at ten locations for a total of twenty samples. Revise the RFI Report to resolve this discrepancy.

2. **Section 4.4.2.4, Offsite Sediment Sampling:** The text states that AGC was unsuccessful in their attempts to gain access to a drainage at the northern property line of the facility to collect sediment samples. Provide evidence such as correspondence, telephone logs etc. between RMC and the land owner to show that such attempts were made. Refer to paragraph 88 of the Consent Decree that specifically outlined the obligations of RMC to secure access to property not owned by RMC.

3. **Table 4-1, Monitoring Well Construction Details:** Table 4-1 includes the depth to water as measured in feet bgs. Generally this measurement would be reported as the depth below the measurement point (e.g. top of casing). The groundwater elevations shown on Figure 5-1 are not consistent with the calculated elevations based on Table 4-1. Neither the TOIC elevation nor the ground surface elevation minus the depth to water yields the elevations shown on Figure 5-1. Revise Table 4-1 and/or Figure 5-1 to include the correct depth measurements and water table elevations.

4. **Drawing 4-2, Sediment Sample Locations:** This drawing lists both a triangle and a checkered square symbol in the legend to represent surveyed sample locations. However, the checkered square symbols do not have any labels associated with them, making it difficult to determine what these sample locations represent. Revise the drawing to include clear labeling for all sample locations.

5. **Section 7.0, Conclusions, Page 35:** The first conclusion for groundwater states that "Groundwater flow in the shallow zone of saturation on-site appears to be generally toward the southeast." Figures 5-1 and 5-2 indicate that there may be a groundwater mound on or near the site creating areas where there also appears toa be flow to the east and northeast. This is supported by metals concentration data which show the highest concentrations of lead and arsenic in the northernmost wells at the site. Revise the conclusion regarding groundwater flow to include discussion of the various groundwater flow directions at the site.

Groundwater

6. **Section 7.0, Groundwater, Page 35, Bullet #2 & #3:** We disagree with the comments that lead concentration above Action Level by total metals analysis appear to be the result of entrained soil in the samples and arsenic values above background values are representative of regional background, because it is somewhat misleading. Although, RMC did not fully identify the purpose of filtering groundwater samples prior to analysis, the premise of this conclusion is that filtration works only for lead ("yields lead values below Action Level") and does not work for arsenic. Therefore, since the filtration did not reduce arsenic concentration, the reported varied arsenic concentrations in onsite monitoring wells and detected above established background values are therefore representative of regional background. We fail to see the logic in this type of interpretation. The filtration process should not selectively reduce metal concentration. If it reduces the concentration of lead then the concentration of arsenic should also be reduced. The concentration of arsenic detected in onsite monitoring wells are either below or above the established background values. In this instance, the arsenic concentrations reported in Monitoring wells #1, #2, #3, #7 and #8 were all above the established background values and are therefore, not representative of regional background.

   Also based on the data presented, there appears to be a correlation between the arsenic detected in monitoring wells #1, # 2, # 7 and #8 and soil samples collected from the vicinity of these wells. This is an indication that the arsenic reported in these onsite wells are due to impact from previous site operations.

Soils

7. **Section 7.0, soils, Page 35, Bullet #2:** The U.S. EPA's risk-based threshold for lead in soils is **750mg/kg**. Data collected for both phase I, closure investigations and phase II demonstrate clearly that lead in onsite soils are well above this threshold. Therefore, the conclusion is unacceptable.

Interim Measures

Provide additional information on the completed Interim Measures at the RMC facility. Information such as "As-Built Diagram", why interim measures were implemented, adequacy, suggested modifications, are the measures accomplishing its intended purpose, recommendations etc. will be helpful in verifying whether the Interim Measures plan was adequately followed.

Data

The data qualifiers listed in the analytical results tables do not appear to be consistent with the information contained in the DVRs. For example, according to the DVR sample R2SB-7A should be qualified as estimated (J) for lead only. However, in Table 5-2 this sample is qualified

J for both lead and arsenic. In addition, the DVR indicates that the arsenic result for sample R2SB-11A should be qualified J. However, Table 5-2 does not include a qualifier for the arsenic result in this sample. Sample R2SB-10B is another example. The DVR does not indicate that this sample should be qualified J. However, Table 5-2 has both the arsenic and lead results in this sample qualified J. Clarify these apparent discrepancies. Also, ensure that all data qualifiers are discussed in the text of the DVR. Finally, ensure that all data qualifiers discussed in the text of the DVRs are correctly applied to the analytical data tables.

REVIEW OF
PHASE II RCRA FACILITY INVESTIGATION REPORT

REFINED METALS CORPORATION
BEECH GROVE, INDIANA
EPA ID No. IND000718130

Submitted to:

Mr. Allen Wojtas
U.S. Environmental Protection Agency
Region 5 DE-9J
77 West Jackson Boulevard
Chicago, Illinois 60604

Submitted by:

TechLaw, Inc.
105 W. Madison
Suite 900
Chicago, Illinois 60602

EPA Work Assignment No.	R05902
Contract No.	68-W-02-019
EPA WAM	Allen Wojtas
Telephone No.	(312) 886-6194
TechLaw WAM	Terry Uecker
Telephone No.	(312) 345-8974

JULY 10, 2002

REVIEW OF
PHASE II RCRA FACILITY INVESTIGATION REPORT

REFINED METALS CORPORATION
BEECH GROVE, INDIANA
EPA ID NO. IND000718130

The following comments were generated based upon a completeness and technical adequacy review of the Phase II RCRA Facility Investigation Report (RFI Report), dated May 3, 2002 for the Refined Metals Corporation (RMC) facility at Beech Grove, Indiana.

GENERAL COMMENTS

1. The RFI Report does not contain complete documentation of the field activities and field data collected during the Phase II investigation. Typically the RFI work plan should include more detailed descriptions of all the procedures to be performed in the field. Since all the procedures were not described in the Phase I or Phase II work plans, the actual procedures performed should be provided in the RFI Report. Some of the specific procedures that should be described in the RFI Report include: standard operating procedures (SOPs) for the calibration and operation of all field instruments, well development procedures, record keeping procedures and copies of any forms used in the field.

   In addition, information and data collected in the field should be included in the RFI Report. These records help identify what conditions existed during the field work and can be used to demonstrate correct implementation of the sampling and analysis plan. Specifically, the types of documentation that should be provided in the RFI Report include: well development records (including techniques used, amount of time spent during development, amount of water removed from well, and turbidity measurements) well purging records (including purge times and volumes, conductivity, pH, turbidity, and temperature measurements), chain-of-custody forms, and copies of field logs.

   Revise the RFI Report to include complete documentation of field activities and field data collected during the Phase II RFI.

2. The RFI Report does not include discussion of planned or recommended future actions at the site based on the results of the Phase II RFI. It is unclear from the RFI Report whether any additional investigation is proposed or whether RMC plans to perform the risk assessments necessary for the Corrective Measures Study. Given the characterization of the extent of contamination is questionable in some areas (See General Comment 3), RMC may need to consider additional investigation activities. Revise the RFI Report to provide recommendations for the next step(s) in the process.

3. Based on the information contained in the RFI Report, it appears that the extent of contamination has not been completely characterized. Specific areas that may require further evaluation include the following:

- Figure 5-5 in the Phase I RFI Report depicts the results from deepest on-site soil samples (24 - 30" below ground surface (bgs)). Five of these samples had lead concentrations above the associated Region IX Preliminary Remediation Goal (PRG), and five samples had arsenic concentrations above the calculated background value, suggesting that the vertical extent of metals contamination has not been fully characterized.

- Numerous samples collected from ditches adjacent to or within the site had lead and arsenic above, sometimes significantly above, the associated PRG and background values. Further ditch sampling may be required at downstream locations.

- During the Phase II RFI, several samples were not collected in the railroad right-of-way due to the inability of samplers to gain access to the site. Likewise, several sediment samples were not collected in the ditch along Arlington Avenue due to "construction activities by the local Department of Public Works."

- Lead was detected at concentrations above the Action Level in all three monitoring wells in the northern portion of the site. Arsenic was also detected in these wells at concentrations above the calculated background. The extent of metals contamination in shallow groundwater may require further evaluation, particularly to the north of the current on-site monitoring wells.

These characterization issues will need to be considered in future sampling efforts at the site before an adequate evaluation of risk can be performed. It is not appropriate for risk decisions to be made regarding the necessity of remedial actions at a unit until the full extent and magnitude of contamination has been delineated. Complete characterization is necessary to ensure that the maximum contaminant concentrations have been identified and are incorporated into the risk assessments. Revise the RFI Report to include proposals for future sampling activities that will complete characterization of the nature and extent of contamination in the areas listed above.

4. Neither the current RFI Report nor the previous RFI Report or RFI Work Plans discuss the criteria used to select the screen intervals for the site monitoring wells. The boring logs indicate soil moisture in some intervals, but it is unclear whether the screen intervals for the wells were selected to overlap the uppermost water level observed in the borings or whether other factors were considered. Revise the RFI Report to include a discussion of the procedures or criteria used in the field to determine the screen intervals during construction of the monitoring wells.

5. The RFI Report does not include any data collected on soil pH. This information is important at the RMC site because the nature of the potential contaminants. Metals are likely to be mobilized in acidic soils. The Phase I RFI Report, dated March 29, 2000 indicates in Section 2.3.1 that acids were collected in a sump and transferred to the water treatment system. Any soil pH measurements should be reviewed, particularly in these areas where there was the potential for releases of acids. Any areas where acidic soil conditions exist may have more significant metals contamination at deeper levels. If soil sampling has not been performed near the sump, additional soil samples may need to be considered in the future.

6. Additional interpretation of the soil and groundwater data would be useful in delineating the extent of contamination. For instance, it would be helpful to either contour or map the locations where arsenic or lead concentrations were above their associated background or PRG. This would more clearly illustrate the extent of contamination or any areas where additional characterization may be necessary.

7. The Data Validation Reports (DVRs) contained in Appendix B, Appendix C and Appendix D of the RFI Report appear to evaluate the necessary quality control (QC) parameters. However, the DVRs do not include an evaluation of the frequency of most of the QC parameters. Therefore, it cannot be verified if the correct number of continuing calibration verification (CCV), laboratory control sample (LCS), matrix spike (MS), duplicate, and blank analyses were performed. Revise the DVRs to include information on the frequency of each of these QC analyses.

8. The information contained in the Calibration section of each of the DVRs is incomplete and in some cases incorrect. The QC acceptance limits for the initial calibration verification (ICV) are not provided. In addition, two of the DVRs indicate that the calibration procedure for mercury involved using one standard and a blank. However, according to SW-846 Method 7470/7471, five standards and a blank are used to calibrate the Cold Vapor Atomic Adsorption Spectrophotometer (CVAA). Furthermore, SW-846 Method 7000 states that at least three standards and a blank are normally used for an initial calibration. Revise the DVRs to provide the ICV acceptance criteria for each of the analytical methods. In addition, clarify if only one standard and a blank were used to calibrate the CVAA. If more than one standard was used for the CVAA, revise the DVR to include the number of standards, the correlation coefficient, and the acceptance limits for the CVAA initial calibration. If only one standard was used for CVAA calibration, revise the DVRs to discuss how the data are affected by this deviation.

9. The data qualifiers listed in the analytical results tables do not appear to be consistent with the information contained in the DVRs. For example, according to the DVR sample R2SB-7A should be qualified as estimated (J) for lead only. However, in Table 5-2 this sample is qualified J for both lead and arsenic. In addition, the DVR indicates that the arsenic result for sample R2SB-11A should be qualified J. However, Table 5-2 does not include a qualifier for the arsenic result in this sample. Sample R2SB-10B is another

example. The DVR does not indicate that this sample should be qualified J. However, Table 5-2 has both the arsenic and lead results in this sample qualified J. Clarify these apparent discrepancies. Also, ensure that all data qualifiers are discussed in the text of the DVR. Finally, ensure that all data qualifiers discussed in the text of the DVRs are correctly applied to the analytical data tables.

SPECIFIC COMMENTS

1. **Section 4.0, Introduction, Page 16:** The second paragraph indicates that 22 sediment samples were collected in August, 2001. However, Section 4.4.2.2 and Table 5-3 both indicate that only two samples were collected at ten locations for a total of twenty samples. Revise the RFI Report to resolve this discrepancy.

2. **Section 4.4.2.2, On-Site Sediment Sampling, Page 22:** The third sentence in this section states that "two locations were not accessible due to construction activities by the local Department of Public Works." It is unclear what type of activities prevented the sampling and where sample locations were eliminated. If the soils/sediments in the drainage ditch were disturbed by the construction activities (e.g. removed or covered), this should be discussed in the RFI Report. Revise the RFI Report to provide additional detail about the construction activities and identify the area that was not sampled.

3. **Table 4-1, Monitoring Well Construction Details:** Table 4-1 includes the depth to water as measured in feet bgs. Generally this measurement would be reported as the depth below the measurement point (e.g. top of casing). The groundwater elevations shown on Figure 5-1 are not consistent with the calculated elevations based on Table 4-1. Neither the TOIC elevation nor the ground surface elevation minus the depth to water yields the elevations shown on Figure 5-1. Revise Table 4-1 and/or Figure 5-1 to include the correct depth measurements and water table elevations.

4. **Drawing 4-2, Sediment Sample Locations:** This drawing lists both a triangle and a checkered square symbol in the legend to represent surveyed sample locations. However, the checkered square symbols do not have any labels associated with them, making it difficult to determine what these sample locations represent. Revise the drawing to include clear labeling for all sample locations.

5. **Section 5.2.2.1, September 2001 Sampling Event, Page 26:** The first paragraph states that the water level measurement collected at MW-6SR appeared to be anomalous and was excluded from the water table map (Figure 5-1). While it may be appropriate to prepare the map without the data point in this case, the data still needs to be reported. If future measurements also trend high or low at this well, then possible explanations for the unexpected readings (e.g. hydrologic conditions or measurement error) may need to be explored.

6. **Section 5.3.3, Off-Site Soil Results, Page 30:** The first complete sentence on this page refers the reader to Appendix F for the calculations used to determine the background concentration for arsenic. It appears the reference should be Appendix E.

7. **Section 7.0, Conclusions, Page 35:** The first conclusion for groundwater states that "Groundwater flow in the shallow zone of saturation on-site appears to be generally toward the southeast." Figures 5-1 and 5-2 indicate that there may be a groundwater mound on or near the site creating areas where there also appears to be flow to the east and northeast. This is supported by metals concentration data which show the highest concentrations of lead and arsenic in the northernmost wells at the site. Revise the conclusion regarding groundwater flow to include discussion of the various groundwater flow directions at the site.

8. **Appendix B, DVR for August 21-27, 2001 Samples:** This DVR presents conflicting information on the analytical method. In the first paragraph, the DVR indicates that samples were analyzed by Method 6010. However, the DVR also indicates that the samples were analyzed by inductively coupled plasma-mass spectrometry (ICP-MS) which is Method 6020. Revise the DVR to clarify if samples were run by Method 6010 or 6020.

9. **Appendix B, DVR for August 21-27, 2001 Samples:** This DVR indicates that blank contamination was observed for lead, and that samples were qualified as non-detected due to this contamination. However, the procedure used to qualify these samples is unclear. Revise the DVR to clarify if all samples at or below five time the blank concentration were qualified as non-detected.

10. **Appendix C, DVR for September 22-24, 2001 Samples:** The MS section of this DVR does not include a list of samples associated with the QC exceedences. Therefore, it cannot be verified if the data were qualified appropriately. Revise this section of the DVR to include a list of samples associated with the MS exceedences.

ADVANCED GEOSERVICES CORP. *"Engineering for the Environment"*™

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August 8, 2001

98-478-04

Mr. Jonathan Adenuga
Corrective Action Center
USEPA Region V
77 West Jackson Blvd.
Chicago, IL 60604-3590

RE: Refined Metals, Beech Grove
Response to EPA Final Approval letter dated July 13, 2001

Dear Jonathan:

We are in receipt of your letter dated July 13, 2001 granting Exide final approval for the revised Phase II RCRA Facility Investigation (RFI) Work Plan and the Work Plan for the Installation of Interim Measures (dated December 20, 2000).

Implementation of Phase II RFI and Interim Measures has begun in accordance with the approved schedule. The field work is scheduled as follows:

- Mobilization to the Site on August 20, 2001;
- Installation of wells beginning August 21, 2001. Well development the following week;
- Soil and sediment sampling during the week of August 20, 2001 and August 27, 2001;
- Groundwater sampling during the week of September 24, 2001; and
- Interim measures during the week of August 27, 2001.

This schedule is consistent with the approved Work Plan. Please call me with any questions.

Sincerely,

ADVANCED GEOSERVICES CORP.

Paul G. Stratman, P.E.
Senior Project Consultant

PGS:np

cc: Matt Love (Exide)
Rebecca Jonistan (IDEM)

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

DE-9J

July 13, 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

Phase II RCRA Facility Investigation Work Plan
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the June 27, 2001 response to comments. We believe that your response adequately address the comments contained in our April 3, 2001 letter. The U.S. EPA is granting you a final approval for the revised Phase II RCRA Facility Investigation (RFI) Work Plan and the Work Plan for Installation of Interim Measures dated December 20, 2000. Implementation of the phase II work plan and the Interim Measures should commence in accordance with the schedule contained in the December 20, 2000 work plan.

If you have any questions, I can be reached at (312) 886-7954

Sincerely,

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

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June 27, 2001

98-478-04

Mr. Jonathan Adenuga
Corrective Action Center
USEPA Region V
77 West Jackson Blvd.
Chicago, IL 60604-3590

RE: Refined Metals Beech Grove
Response to EPA Comment Letter Dated April 3, 2001

Dear Jonathan:

Provided herein are responses to EPA comments contained in a letter dated April 3, 2001 that was received by Exide Corporation on June 12, 2001, for the Refined Metals Corporation (RMC) Facility located in Beech Grove, Indiana. These responses and the associated changes to the referenced documents were prepared by Advanced GeoServices Corp. (AGC) on behalf of RMC. The responses are provided below and correspond to the numbering system contained in your April 3, 2001 letter.

1. As part of the Closure Investigation activities required by IDEM, background soil sampling has been conducted at the site. The results of the analysis are summarized in the Closure Investigation Report (AGC, June 1, 2000). As noted in the report, the representativeness of the values for lead and arsenic are suspect. As part of the Phase II RFI activities, RMC will re-perform the background soil sampling procedure for arsenic at a separate off-site location to confirm the previous results. Remaining portions of background samples will be archived for future analysis if required at a later time by EPA or IDEM. The protocol to be followed will be consistent with the IDEM procedures previously utilized during Closure Investigation sampling, as described in Attachment 1 of this letter. Although the final location will be dictated by landowner consent, the proposed area will be the extreme northwestern edge of the Citizens Gas property. This location has been selected because it is located nearly a quarter of a mile from the Site and access has already been granted by Citizens Gas during previous sampling events.

   Background groundwater concentrations will be provided by the upgradient well already proposed as part of the Phase II work for the west corner of the Site.

2. The groundwater sampling section has been revised to include a reference to Table 3-3. The revised section of the Phase II RFI Work Plan is attached.

3. No comparison will be made between background soil lead concentrations and concentrations observed during sampling. Instead, soil lead results will be compared to EPA screening levels of 1,000 mg/kg for non-residential areas and 400 mg/kg for residential areas. For arsenic, concentrations observed during soil sampling will be compared to the background soil concentration for arsenic developed using IDEM procedures.

   Regarding the adequacy of the sampling, the results of previous sampling for lead south and east of the site show results at or below the non-residential screening levels that are applicable to these areas, therefore additional sampling was not proposed. Proposed sampling for lead and arsenic north and west of the site extends 800 feet north of the northeast corner of the site into the closest residential area, which should be adequate to define the extent of contamination. Samples will be collected on 200 feet intervals. If sampling does not delineate the extent of contamination based on EPA screening levels for lead and background concentrations for arsenic, additional sampling will be conducted at 200 feet intervals until delineation is complete.

4. As discussed in the response to comment No. 1, the background soil sampling for arsenic will be redone. Results of the re-analysis are expected to demonstrate that except for the area towards the west of the RMC facility already proposed for additional soil sampling, arsenic values have already been delineated to a level below the background value established following the IDEM protocol. Based on this expectation, the background sampling will be performed at the same time as the well installation and development activities. Samples will be submitted for rapid turn-around, allowing the recalculation of background arsenic before re-mobilization for groundwater sampling activities. If the newly calculated background arsenic concentration indicates that sampling towards the northeast, east and south is inadequate, then additional samples will be collected at 200 feet intervals, 200 feet from the facility property-line in those areas where the sampling is incomplete. Additionally, the Phase I RFI report text (Section 7.0, Soil) stated that a Site Specific Risk Assessment would be performed. Any decision regarding the necessity to perform a risk assessment will be made after collection of the proposed Phase II data. It should be clarified that no risk assessments are currently proposed for lead or arsenic.

5. The EPA is correct in interpretation that surface and subsurface soils will be separate. This wording has been revised. The revised section of the Phase II RFI Work Plan is attached.

6. The Interim Measures Work Plan has been revised to eliminate the confusion. Revised sections and figure of the Interim Measures Work Plan are attached.

We believe that the responses provided above adequately address the comments contained in your April 3, 2001 letter. Figure 3-1 of the Phase II RFI Work Plan has also been modified to correctly depict the locations of the three shallow monitoring wells installed during Phase II. Implementation will commence in accordance with the schedule contained in the December 20, 2000 Work Plan upon receipt of your final approval.

If you have any questions, or require additional information, please call me at (610) 675-2122. We look forward to moving forward with this project.

Sincerely,

ADVANCED GEOSERVICES CORP.

Paul G. Stratman, P.E.
Senior Project Consultant

PGS:vm

Attachments

cc: Matthew Love (Exide)
Rebecca Joniskan (IDEM)

ATTACHMENT 1

Background Sampling Procedures

ATTACHMENT 1

Background Sampling Procedures

Soil Sampling

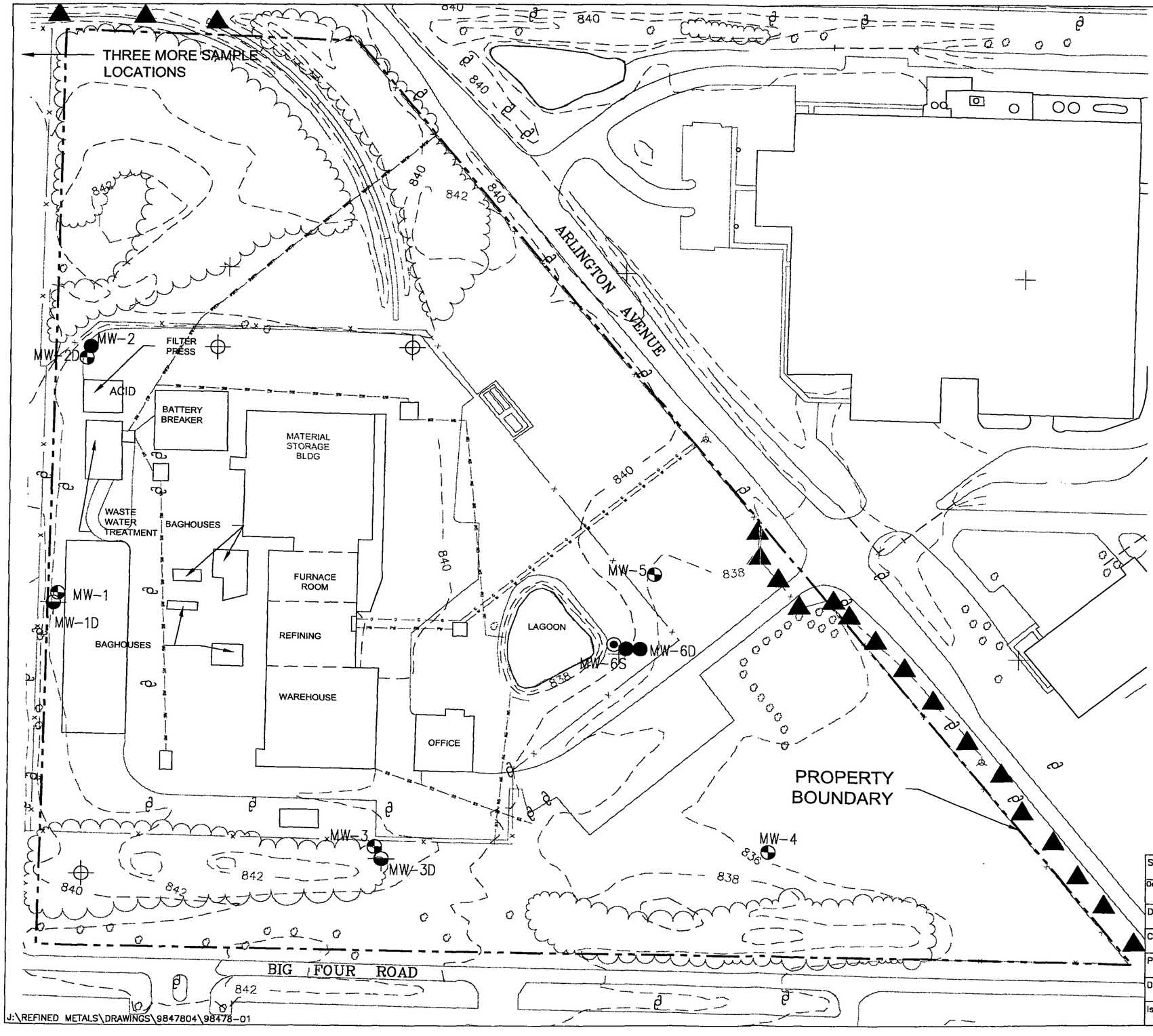
Background soil levels are defined as the mean of four sample concentrations for each soil horizon plus one standard deviation. Samples will be collected from off-site areas unaffected by past hazardous waste operations or operations of the RMC facility.

Background soil sampling will be performed at four boring locations. One sample will be collected from each soil horizon at each boring. Soil horizons will be identified by in the field by a Professional Geologist using visual soil identification methods. The sample will be generated by using the entire horizon retrieved in the geoprobe. The sample will be placed into a mixing bowl and thoroughly homogenized. Following homogenization, a representative sample will be collected from the bowl and placed in laboratory supplied sample jars.

If the coefficient of variation for the background soil samples exceeds 1.2, additional background soil sampling will be evaluated.

Groundwater Sampling

Background groundwater levels are defined as the 95% upper confidence limit (UCL) of the mean of quarterly sampling at each background well.



J:\REFINED METALS\DRAWINGS\9847804\98478-01

LEGEND

- EXISTING MONITORING WELL–SURVEYED BY THE SCHNEIDER CORP., INDIANAPOLIS, IN
- MONITORING WELL–INSTALLED AS PART OF RFI ACTIVITIES–SURVEYED BY THE SCHNEIDER CORP., INDIANAPOLIS, IN
- MW-1D — DEEP TEST BORING FROM RFI ADVANCED WITH INTENTION OF CREATING DEEP WELL THAT DID NOT ENCOUNTER WATER AND THEREFORE MONITORING WELL WAS NOT CONSTRUCTED
- PROPOSED PHASE II SHALLOW MONITOR WELL INSTALLATION LOCATION.
- REPLACEMENT LOCATION WELL
- PROPOSED SEDIMENT SAMPLING ALONG DRAINAGE DITCHES.

NOTE:

WELLS DRILLED DURING THE RFI AND CLOSURE INVESTIGATIONS HAVE BEEN ASSIGNED AN S OR D TO DESIGNATE SHALLOW AND DEEP WELLS RESPECTIVELY. ORIGINAL WELLS NOT DESIGNATED WITH AN S OR D ARE CONSIDERED SHALLOW WELLS.

REFINED METALS CORPORATION
PHASE II RCRA FACILITY INVESTIGATION
BEECH GROVE, IN

Scale: 1"=130'	PROPOSED AND EXISTING SITE WELL LOCATIONS
Originated By: K.A.W.	
Drawn By: P.S.G.	
Checked By: SW	
Project Mgr: P.G.S.	
Dwg No. 98478-16	
Issued: JUN 27 2001	

Advanced GeoServices Corp.
Chadds Ford Business Campus, Rts. 202 & 1
Brandywine One, Suite 202
Chadds Ford, Pennsylvania 19317

Project No. 98-478-04

FIGURE: 3-1

ATTACHMENT 2

Revised Text and Figures
Phase II RFI Work Plan

3.2.2.3 **Groundwater Sampling**

Once the field parameters have stabilized, the groundwater samples will be collected in laboratory-supplied bottles containing the necessary preservatives following procedures outlined in the RFI Work Plan. The samples will be packed with ice and shipped to TriMatrix Laboratories Inc. for analysis of eight RCRA metals, and antimony using EPA Method SW-846 6010/7000 series depending on the required detection limits for the project. If groundwater samples cannot be collected using low-flow procedures, then total and dissolved metal samples will be collected. Samples for dissolved metals will be filtered through a dedicated disposable Nalgene 0.45 μm membrane filter immediately after collection and prior to preservation.

All decontamination, sample handling and shipment protocols will follow procedures outlined in the Phase I RFI Work Plan.

Two groundwater sampling rounds are proposed for the shallow monitoring wells at the Site. Table 3-3 provides a summary of the number of samples and analysis proposed. There will be no less than three months between sampling rounds.

3.3 SOIL SAMPLING

Off-site soil samples will be collected to more fully characterize the extent of site-related constituents. A 200-foot grid will be used to guide the soil sampling efforts (Figure 3-2). The grid will extend 600' towards the west along the western property line and 800' towards the north, although as stated in the Phase I RFI Work Plan, not every grid node will necessarily be sampled because of access and location selection criteria. Approximately 65 locations will be sampled off-site. All samples will be analyzed for lead and arsenic. Surface samples (0-3 inches) will be collected using dedicated disposable scoops; and subsurface samples (3-10 inches) will be collected using decontaminated hand augers. Each sample will be homogenized in a decontaminated stainless steel bowl prior to being placed in a laboratory-supplied sample jar. The decontamination

procedures which will be followed are presented in Appendix B of the Phase I RFI Work Plan. Soil locations will be surveyed by a professional surveyor licensed in the state of Indiana.

3.4 SEDIMENT SAMPLING

Sediment samples from depths of 0-6-inches and 6-12-inches will be collected along the storm water ditch that drains the northwest corner of the site and from the existing stormwater retention lagoon that drains to the south of the site (Figure 3-1). Approximately 400 linear feet of the northwest drainage ditch will be sampled using a 75-foot grid spacing. Approximately 1400 linear feet of the retention/south drainage ditch will be sampled using a 75-foot grid spacing. A total of 12 samples from six locations will be collected from the northwest ditch. A total of 32 samples from 16 locations will be collected from the off-site area along the fenceline from the south ditch. All samples will be collected from the center of the drainage channels. All samples will be collected using a decontaminated hand auger. Soil samples will be homogenized in decontaminated stainless steel bowls prior to placement into laboratory-supplied jars. All samples will be analyzed for lead and arsenic. Sediment locations will be surveyed by a professional surveyor licensed in the State of Indiana.

ATTACHMENT 3

Revised Text and Figure
Work Plan for Installation of Interim Measures

of flow), as shown in Figure 2. The end of the check dam will begin at the ballast for the abandoned railroad track and will extend away from the tracks in both directions, across the drainage ditch and railroad track, as shown in Figure 3. The check dam will extend a minimum distance of 10 feet beyond the centerline of the ditch on either side. The check dam will be slightly concave, with the center of the check dam approximately 2 feet further down stream than the ends. The center of the check dam will have a height equal to the top of the existing rail or 2 feet (whichever is lower). This will provide an effective means to intercept, detain, and control runoff which will prevent sediment from leaving the site.

Specifications for the stone and geotextile to be utilized are attached. Construction will be performed under the observation of a representative from AGC. The Contractor will submit manufacturer's information and materials gradation demonstrating that the material meets these specifications or are suitable alternates as determined by AGC. The implementation of this work plan will ultimately be dictated by actual physical features in the field.

1.2 SILT FENCE

Silt fence will be placed at the locations shown in Figure 1. The silt fence will be installed as shown. The silt fence will be installed according to the specifications and to the dimensions shown on Figure 4. Silt fence will remain in-place until disturbed areas have been re-stabilized with vegetation that will be seeded by the Contractor following completion of check dam construction.

1.3 PERMITS AND APPROVALS

Implementation of the proposed interim measures may require the attainment of several permits and/or approvals. Because the check dams will be constructed across and adjacent to the railroad spur, it will be necessary to determine ownership of the spur and whether any railroad permits need to be acquired prior to initiation of the work. At the present time it appears that RMC is the owner of the spur and, as such, no special permission will be required; however, this remains to be confirmed.

2.0 SPECIFICATIONS

2.1 CHECK DAM SPECIFICATIONS

Four check dams shall be placed in the designated areas shown on Figure 1. The check dams shall be constructed according to the specifications shown in the detail presented in Figure 1 and according to the following specifications.

- The dam shall be equal in height to ½ the total depth of the channel with a 6" depression in the center.
- The dam shall be constructed of a stone with a d_{50} of 3 inches. A 1-foot thick layer of AASHTO #57 stone shall be placed on the upstream side of the geotextile.
- A geotextile, as shown in Figure 2 and specified in the Geotextile Specifications, shall be placed under the AASHTO #57 stone.
- Check dams shall be inspected weekly and after each runoff event.
- Clogged stone (AASHTO #57) shall be replaced.
- Needed repairs shall be initiated immediately after the inspection.

2.2 GEOTEXTILE SPECIFICATIONS

The geotextile used within the check dams and silt fence shall consist of long chain polymeric filaments or yarns such as polyethylene, polyamide, polyvinyledene-chloride, polypropylene, or polyester formed into a stable network so that the filaments or yarns retain their relative position to each other. During periods of shipment and storage, the fabric shall be protected from direct sunlight, ultra-violet rays, temperatures greater than 140F, mud, dirt, dust, and debris. The rolled fabric shall be wrapped in a heavy duty covering or shield from direct sunlight. The geotextile shall conform to the requirements shown in Table 1.

TABLE 1
Physical Requirements[1]
For Geotextile

Property	Test Method	Wire Fence Supported Requirements
Grab Tensile Strength, lbs.	ASTM D1682 (1")	120 minimum[2]
Grab Tensile Elongation, %	ASTM D1682	15
Retention Efficiency, %	VTM-51[3]	75
Slurry Flow Rate, gal/min/ft	VTM-51[3]	0.3
Ultraviolet[4] Degradation	ASTM D1682	Minimum 70% strength retained

NOTES:

1. Geotextile physical properties and a letter from the supplier certifying that its geotextile meets specification requirements shall be submitted to the Field Engineer.
2. Minimum - Use value in weaker principal direction. All numerical values represent minimum average roll value (i.e., test results from any sampled roll in a lot shall meet or exceed the minimum values in the table).
3. Virginia D.O.T. Test Method.
4. Strength retained after 500 hours of Xenon or Atlas Twin Arc Weather-o-meter.

2.3 SILT FENCE SPECIFICATIONS

Silt fence shall be placed downgradient from the disturbed areas as shown on Figure 1. The silt fence shall be used to filter storm water from the areas requiring check dams. The silt fence geotextile shall be woven and conform to the requirements shown in Table 1 of the Geotextile Specifications. The installation of the silt fence shall conform to the following:

- Silt fence shall be installed at level grade. Both ends of each fence section shall be extended at least 8 feet upslope at 45 degrees to the main fence alignment to allow for pooling of water.

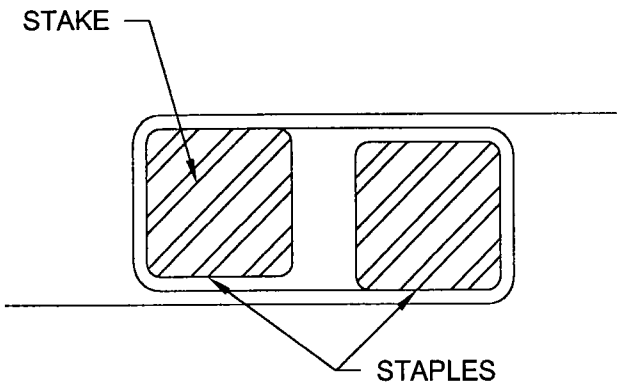
- A 6" deep trench shall be excavated, minimizing the disturbance on the downslope side. The bottom of the trench should be at level grade.

- Support stakes shall be driven 18" below the existing ground surface at 8 foot (max.) intervals.

- Geotextile shall be stretched and fastened to the upslope side of the support stakes. At geotextile ends, both ends should be wrapped around the support stake and stapled. If the geotextile comes already attached to the stakes, the end stakes should be held together while the geotextile is wrapped around the stakes at least one revolution prior to driving the stakes.

- The bottom of the fence should be anchored by placing the geotextile in the bottom of the trench, and backfilling and compacting the fill material in the trench.

- The silt fence shall be inspected weekly and after each runoff event. Needed repairs should be initiated immediately after the inspection.



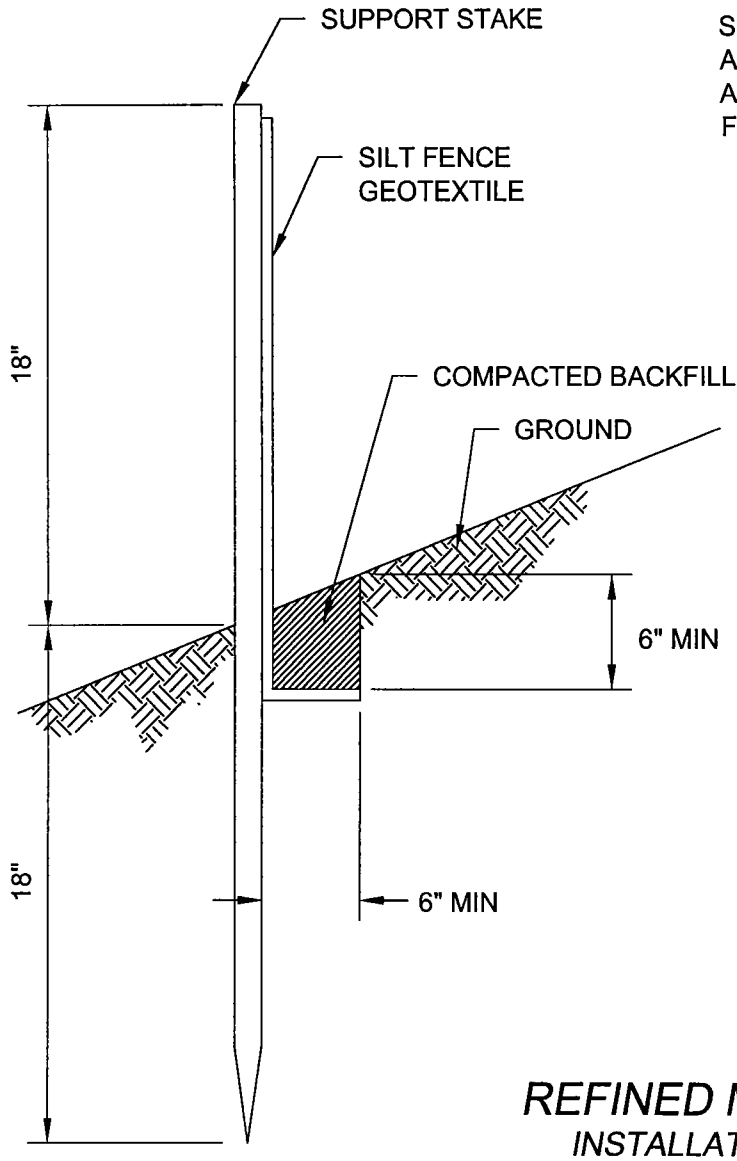
JOINING FENCE SECTIONS

NOTES:

STAKES SPACED @ 8' MAXIMUM. USE 2" x 2" WOOD OR EQUIVALENT STEEL STAKES.

SILT FENCE MUST BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE BARRIER MUST BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45° TO THE MAIN BARRIER ALIGNMENT.

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF THE FENCE.



REFINED METALS CORPORATION

INSTALLATION OF INTERIM MEASURES

BEECH GROVE, IN

Scale: N.T.S.	SILT FENCE DETAIL
Originated By:	
Drawn By: P.S.G.	
Checked By: P.S.C.	Advanced GeoServices Corp.
Project Mgr: P.G.S.	Chadds Ford Business Campus, Rts. 202 & 1
Dwg No. 98478-17	Brandywine One, Suite 202
Date: JUN 27 2001	Chadds Ford, Pennsylvania 19317
Project No. 98-478-03	FIGURE: 4

J:\REFINED METALS\DRAWINGS\98-478-03\98478-17

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 0 3 2001

REPLY TO THE ATTENTION OF

Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205
(610) 921-4054

Phase II RCRA Facility Investigation Work Plan
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the Phase II RCRA Facility Investigation (RFI) Work Plan and the Work Plan for Installation of Interim Measures dated December 20, 2000. Following the review of your response to comment letter regarding the current RCRA RFI at the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana, We agree with the following: RMC has adequately addressed several of the November 29, 2000, U.S. EPA comments regarding **Sections 3.5, Site Hydrogeology, 4.2.4 Well development, 6.1, Groundwater and 8.4, Sediments.**

The enclosed attachment describes certain deficiencies noted in the Phase II Work Plan, Interim Measures Work Plan and details certain revisions that must be made to these Work Plans. At this time, we do not see any need in requesting that RMC revise the entire Phase II Work Plan and the Interim Measures Work Plan. Rather, revised text addressing U.S. EPA's comments in the attachment should be submitted for inclusion in the Work Plans. Meanwhile, U.S. EPA is providing you with a conditional approval. U.S. EPA will provide RMC with a final approval, once all of the issues in the attachment are fully addressed.

The enclosed attachment provides you with U.S. EPA's comments to specific sections of the Work Plans. The revised texts should be submitted within 30 days of receipt of this letter . If you have any questions, I can be reached at (312) 886-7954.

Sincerely,

Jonathan Adenuga
Corrective Action Section
Enforcement Compliance Assurance Branch

ATTACHMENT

1. It is noted that elevated levels of arsenic will reportedly be addressed through a site specific risk assessment (as stated in Section 7 of the Phase I RFI Report.) as it is presumed that regionally high background levels of arsenic exist in the area soils. If arsenic was not determined to be a background level characteristic of the area, the extent of the contamination would have to be defined prior to performance of a risk assessment. Refined Metals may need to revise the objectives of the Phase II RFI Work Plan to include background soil and groundwater sampling necessary to establish the likelihood that these arsenic levels are true background concentrations.

2. **Section 3.2.2.3 Groundwater Sampling.**

   The discussion on groundwater sampling must indicate the number and location of samples to be collected during each sampling round. The Phase II RFI Work Plan does not include this information. Revise the Phase II Work Plan to either state the amount of sampling to be performed in the text of the Phase II Work Plan, or provide a reference to Table 3-3, which describes the sampling quantity and frequency. This table is not referenced or explained elsewhere in the Phase II Work Plan.

3. **Section 3.3 Soil Sampling.**

   This section presents details on the proposed off site soil sampling which includes the collection of up to two samples (one surface sample and one subsurface sample) from 65 discrete locations. This sampling scheme appears to relate back to information presented in Section 6.2.2 (Off-Site Soil) of the Revised Phase I RFI Report (August 2000). While this approach appears to be warranted, it does not currently appear to be adequate to completely define the extent of contamination. In Section 7.0 (Conclusions) of the Revised Phase I RFI Report (August 2000), Refined Metals states that the potential for offsite contamination is due in part to "Off-site migration of Airborne Contaminants". However, RMC has not fully described how in intends to compare onsite/off-site lead concentrations to reported background levels. Revise the Phase II Work Plan accordingly.

4. **Section 3.3 Soil Sampling.**

   The prior sampling of on site and off site soils was used in part to define the proposed Phase II RFI Work Plan (December 2000) sampling locations. The areas to the West of the site appear to be impacted, while impacts to other on site and off site locations are more widely distributed and include lower concentrations of lead and arsenic. However, as stated in Section 6.2.2 of the Phase I RFI Report, each soil sample collected off site had detected arsenic at levels above the PRGs. Since the future off site sampling is

limited to lands to the North and West of the site, it is not clear how/if the elevated levels of arsenic which were detected South of the facility above the PRGs will be adequately addressed. If the elevated arsenic levels were consistent throughout the area then this assumption might be more plausible at this time, however as concentrations vary, it appears warranted to collect additional samples to the South of the site to better define the extent of the arsenic contamination. Revise the Phase II RFI Work Plan accordingly.

5. **Section 3.3 Soil Sampling.**

The procedures providing for collection of the off site soil samples is confusing as worded. This section states that samples will be collected from the surface (0-3 inches) and subsurface (3-10 inches) using scoops and hand augers and homogenized in stainless steel bowls. This appears to indicate that this will result in the collection of a single composite sample comprised of soil from each zone. However, it is believed that the intention is, and should be, to collect two separate samples, one each from the surface and from the subsurface and separately homogenize them in separate bowls. Revise the Phase II RFI Work Plan to clarify this language.

6. **Interim Measures Work Plan**

The background information and summary provided in Section 1 does not appear to be consistent with the Specifications provided in Section 2. The Background section uses terminology such as "Check Dams" and "Silt Fences" while the Specifications section (Section 2) uses terms such as "Rock Filters", "Geotextile" and "Silt Fences". Reference is also made to Table 1 which provides the "Physical Requirements for Geotextile", as well as information on the materials to be used for the silt fence. These inconsistencies in the specific components and terminology related to the erosion control measures is confusing. This makes it difficult to determine exactly what will be installed at the site, and what specific requirements will be met, or will need to be met. Please revise the Interim Measures Work Plan to clarify the specific terminology related to the planned activities.

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Email: agc@agcinfo.com
Web Site: http://www.agcinfo.com

December 20, 2000 98-478-04

Mr. Jonathan Adenuga
Corrective Action Section
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Response to November 29, 2000 Comment Letter
RCRA Facility Investigation Draft Report
Refined Metals Corporation
IND 000 718 130

Dear Mr. Adenuga:

On behalf of Exide Corporation (Exide), Advanced GeoServices Corp. (AGC) is pleased to present the following responses to the United States Environmental Protection Agency (USEPA) review comment letter issued on November 29, 2000 regarding the revised RCRA Facility Investigation (RFI) Draft Report for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana. USEPA comments are restated below in bold followed by Exide's responses in plain text.

1. **Section 3.5 Site Specific Hydrogeology**

It is not clear what is meant by the statement, "The middle perched zone at the facility has not been drastically impacted by the facility operations." It is U.S. EPA's firm position that in order to substantiate this claim of no impact, RMC has to fully investigate the middle perched zone and provide confirmatory analytical results. There are saturated zones such as low permeability clays, that do not yield a significant amount of water, yet act as pathways for contamination that can migrate horizontally for some distance before reaching a zone that yields a significant amount of water. The Agency recommends the use of unsaturated zone monitoring were it would aid in detecting early migration of contaminants into groundwater. For example, monitoring wells MW-2D and MW-6D are the only wells installed in the middle perched zone. These two wells also show arsenic and lead contamination. However, there is no groundwater information from the middle perched zones in the areas that are highly contaminated such as RSB55, RSB58, monitoring wells MW-1, MW-3, and MW-4. Therefore this section must be revised to include a proposal to investigate the middle perched zone.

Response: AGC reviewed the section for the quoted statement contained in the Agency's comment noted above, and could not locate the sentence. The RFI presented a summary of geological conditions in the area (after Meyer, 1975) which indicated that there maybe up to three semi-confined aquifers which may not be continuous throughout the County. According to Meyer (1975) sections of the aquifers are often divided by large areas of silt and clay both horizontally and vertically, resulting in

the fact that some portions of an aquifer may not be encountered in certain portions of the county. The borings completed at the site during the RFI indicated that the upper most regional aquifer was not encountered.

Perched groundwater zones at the site was encountered at depths of approximately 10 feet and 75 feet below ground surface (bgs). The uppermost semi-confined regional aquifer, as defined by Meyers (1975), was not encountered. The site lithologic boring logs indicate that the middle perched zone may not be present in certain portions of the site. USEPA requested further investigation in the above referenced comment because there was no groundwater information presented in the RFI from the middle perched zone in the areas that are highly contaminated such as locations RSB25, RSB55, RSB58 and MW-1, MW-3 and MW-4.

Monitoring wells were not installed at the middle perched zones at locations MW-1 and MW-3 due to the lack of water (boring logs were presented in Appendix A of the RFI). Substantial low permeability silty/clay to clayey silt was encountered at both locations. The boring log from location MW-1D indicated that the hole was dry to slightly moist to depths of 130 feet bgs. At location MW-1D the potential water bearing sand units were encountered at depths of 60 to 62 feet and 66 to 68 feet bgs and were noted to be either dry or only slightly moist. Thin dry to moist sand layers were also observed at monitoring well location MW-3 at depths of 60 to 64, 69 to 70, and 127 to130 feet bgs. The geologic conditions observed at locations MW-1 and MW-3 indicate that the middle perched zone does not exist and, therefore, the groundwater conditions were not investigated.

Monitoring well MW-4 existed at the site prior to the initiation of the RFI, and was incorporated into the groundwater monitoring sampling events that occurred in September 1999 and December 1999. Results of analysis indicates that lead was not detected at a concentration above the detection level, and the detection level did not exceed screening preliminary remediation goal (PRG) of 4 µg/L (Region 9) or the US EPA Safe Drinking Water (December 1999) action level of 15 µg/L. Results of analysis indicates that arsenic was not detected above concentrations above 1.8 μg/L which does not exceed the USEPA Safe Drinking Water Standard of 50 μg/L. Based on the lack of detected concentrations lead and very low arsenic concentrations in the shallow well, MW-4, AGC believes that a deeper investigation at this location is unwarranted.

2. **Section 4.2.4 Well Development**

Based on U.S. EPA's review of Table 4-2, MW-2, MW-3, and MW-4 have become silted. Therefore, the integrity of these monitoring wells is questionable. These 3 monitoring wells should be redeveloped prior to retrieving any groundwater samples for future analysis.

Response: AGC agrees that the original well network, especially those wells that appear to have accumulated silt, need to be redevelopment prior to the collection of additional

groundwater samples. The work plan for conducting this additional field activity is provided as part of the Phase II RFI Work Plan as Attachment A.

3. Section 6.1 Groundwater

In response to your comment regarding totals results as not been representative of actual groundwater conditions, U.S. EPA has consistently made it clear that all groundwater samples must be analyzed for total inorganic constituents. This position has not changed, regardless of whether the groundwater samples are collected using bailers or low-flow sampling technique. The established Maximum Contaminant Levels (MCLs) are base on Unfiltered (total) analytical results. Total metals results must be used in evaluation of the facility groundwater condition. This particular issue must be taken into account in all future groundwater analysis.

Although we agree that additional monitoring wells should be installed, you have not provided a detailed map location of the paved areas and the down gradient area of the facility where you have proposed to install 2 monitoring wells and one shallow well. Therefore, U.S. EPA is unable to properly evaluate your proposal.

Response: AGC and RMC acknowledge the US EPA position regarding the collection of unfiltered (or total) metal samples for comparison with the Safe Drinking Water established Maximum Contaminant Levels (MCLs). As groundwater moves through permeable formations, such as sand and gravel, well development may be accomplished quickly and easily. In contrast flow through relatively impermeable silty or clayey material is slow or limited, consequently the development process can be difficult. Due to the general geologic conditions (silt and clay and silty sand units) noted at the site and low yields, the potential exists for use of bailer sampling devices. Bailers generally have a higher potential for collection of turbid samples when compared to low flow bladder pumps.

If water exceeds 5 nephelometric turbidity units (NTUs), then subsurface geology should be considered during the sampling collection. If the groundwater is not being drawn from a karst, open bedrock fracture area, or clean highly porous gravel-to-boulder deposit which are all characterized by a high degree of particle mobility, then it is reasonable to assume a portion of the turbidity may be attributable to immobile sediment. Field filtering can be used to remove the immobile fraction.

AGC and RMC believe that collecting both dissolved and total inorganic concentrations is required for groundwater samples collected using bailers. The collection of total and dissolved samples provides valuable information regarding the quality of the well, well development, and well design and that data validation requires an understanding of these relationships. Therefore, both total and dissolved metal analysis will continue to be performed when low-flow sampling can not be conducted. It is understood that only total metal analytical results will be compared to the established MCLs for Drinking Water.

AGC recommends to abandon MW-6S for the following reasons:

- The well must be sampled with a bailer due to low recharge rates (recharge is as low as 1-gallon in 24 hours).
- The well is screened in a clay/silt layer and, therefore, is not effectively monitoring the upper perched zone (screened at a depth of 7 to 17 feet bgs).

AGC recommends to install a shallow well near the existing MW-6S and MW-6D at a depth of approximately 31 feet and screen a medium sand unit that occurs from 24 to 31 feet bgs. AGC also recommends the collection of shelby tubes in the upper confining layer in order to better evaluate the vertical permeability of the unit.

The US EPA indicated that groundwater information for the highly contaminated areas at soil sample locations RSB25, RSB55, and RSB58 need to be monitored (see comment 1 above). AGC recommends to install a shallow monitoring well in the area of just south of the baghouse and MW-1/MW-1D well pair. The recommendations noted in the groundwater section of the RFI (Chapter 8) also included the recommendation the installation of two additional shallow groundwater wells immediately north of the paved facility area. Lastly, as part of the recommendations an up/cross gradient well will drilled on the Citizens Gas property or at the western corner of the property depending on accessibility. All proposed well locations are provided on Figure 3-1 in the Phase II RFI Work Plan.

A Phase II RFI Work Plan for conducting these additional investigations is provided as Attachment A.

4. <u>Section 8.4 Sediments</u>

U.S. EPA has concluded that the extremely high levels of lead and arsenic reported in sediment samples collected from the drainage ditch north of the facility constitute a threat to human health and the environment. Also based on the current sampling location and the level of hazardous constituents detected in the sediments, it is likely that offsite migration of lead and arsenic are occurring. An Interim Measures Work Plan for sediment removal must be submitted concurrently with the Phase II Work Plan.

Response: Pursuant to the requirement of the comment, and subsequent conversation between AGC, RMC and the USEPA, a design for the installation of erosion control measures for the drainage ditch located at the north end of the site is provided as an Interim Measure Work Plan Attachment B. The measures are intended to be temporary devices which will retain or prevent the erosion of the sediment.

In addition to the temporary interim measures, the Phase II RFI Work Plan includes an expanded investigation of drainage pathways beyond the limits of the facility. In general, the additional sampling will consists of sediment collection and analysis for lead and arsenic at locations spaced on a linear 75 foot grid. Samples will consists of sediment from both the 0-6-inch and 6-12-inch depths. The sampling will extend a distance of approximately 400 feet in the north drainage ditch and a distance of approximately 1400 feet in the drainage ditch which begins at the driveway and trends to the south-southeast.

Lastly, in addition to the expanded sediment sampling, an off-site soil sampling program will be implemented as recommended in the RFI Report.

Enclosed with this letter is the Phase II Work Plan (Attachment A) and the Interim Measures Work Plan (Attachment B). Accompanying each attachment are certifications from Matthew Love of Exide Technologies.

Please contact AGC or Exide at any time with questions. Please contact Paul Stratman at (610) 558-3300 or Matthew Love at (610)378-0874.

Sincerely,

ADVANCED GEOSERVICES CORP.

Paul G. Stratman, P.E.
Senior Project Consultant

PGS:vm

Enclosures

cc: Matt Love, Exide Corporation
Robert Steinwurtzel, Esq., Swidler & Berlin Chartered
Thomas Linson, Indiana Department of Environmental Management

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 29 2000

Matthew A Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

REPLY TO THE ATTENTION OF
DE-9J

RE: RCRA Facility Investigation Draft Report
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the August 31, 2000 comments and the revised RCRA Facility Investigation (RFI) Draft Report for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana. We agree that your response to U.S. EPA's comments in **Section 2.3.4 Storage Tanks,** **Section 4.3.1 Well Evacuation,** **Section 8.2 Groundwater,** and **Section 8.3 Soils** of the Draft RFI report are adequate. No further response or revisions are needed to those sections in the RFI report. However, we continue to have some concerns with your response to other sections of the RFI report as outlined in Attachment I.

As U.S. EPA indicated in its March 29, 2000 correspondence, we agree with the report that additional investigations must be performed at the RMC facility. Prior to mobilization for any field work, the sampling plan for conducting these additional investigations including the installation of additional monitoring wells must be submitted to the U.S. EPA for approval.

Therefore, the sampling plan for the additional investigations and all necessary revisions to the RFI report addressing U.S. EPA's comments in Attachment I should be submitted within 15 days of receipt of this letter.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
Corrective Action Section

cc: Doug Griffin, IDEM

ATTACHMENT I

1) **Section 3.5 Site Specific Hydrogeology.**

It is not clear what is meant by the statement "The middle perched zone at the facility has not been drastically impacted by the facility operations". It is U.S. EPA's firm position that in order to substantiate this claim of no impact, RMC has to fully investigate the middle perched zone and provide confirmatory analytical results. There are saturated zones such as low permeability clays, that do not yield a significant amount of water, yet act as pathways for contamination that can migrate horizontally for some distance before reaching a zone that yields a significant amount of water. The Agency recommends the use of unsaturated zone monitoring were it would aid in detecting early migration of contaminants into groundwater. For example, monitoring wells MW-2D and MW-6D are the only wells installed in the middle perched zone. These two wells also show arsenic and lead contamination. However, there is no groundwater information from the middle perched zones in the areas that are highly contaminated such as RSB25, RSB55, RSB58, monitoring wells MW-1, MW-3 and MW-4. Therefore, this section must be revised to include a proposal to investigate the middle perched zone in these areas.

2) **Section 4.2.4 Well Development.**

Based on U.S. EPA's review of Table 4-2, MW-2, MW-3 and MW-4 have become silted. Therefore, the integrity of these monitoring wells is questionable. These 3 monitoring wells should be redeveloped prior to retrieving any groundwater samples for future analysis.

3) **Section 6.1 Groundwater**

In response to your comment regarding totals results as not been representative of actual groundwater condition, U.S. EPA has consistently made it clear that all groundwater samples must be analyzed for total inorganic constituents. This position has not changed, regardless of whether the groundwater samples are collected using bailers or low flow sampling technique. The established Maximum Contaminant Levels (MCLs) are base on **Unfiltered** (total) analytical results. Total metals results must be used in evaluation of the facility groundwater condition. This particular issue must be taken into account in all future groundwater analysis.

Although we agree that additional monitoring wells should be installed, you have not provided detail map location of the paved areas and the down gradient area of the facility where you have proposed to install 2 monitoring wells and one shallow well. *Therefore, U.S. EPA is unable to properly evaluate your proposal.*

4) **Section 8.4 Sediments.**

U.S. EPA has concluded that the extremely high levels of lead and arsenic reported in sediment samples collected from the drainage ditch north of the facility constitute a threat to human health and the environment. Also based on the current sampling location and the level of hazardous constituents detected in the sediments, it is likely that offsite migration of lead and arsenic are occurring. An Interim Measures Work Plan for sediment removal must be submitted concurrently with the Phase II Work Plan.

ADVANCED GEOSERVICES CORP. *"Engineering for the Environment"™*

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August 31, 2000 98-478-04

Mr. Jonathon Adenuga
Region 5 Corrective Action Section
Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: RCRA Facility Investigation Report
Response to Comments
IND 000 718 130

Dear Mr. Adenuga:

On behalf of Refined Metals Corporation, Advanced GeoServices Corp. (AGC) submits the following response to comments and revised RCRA Facility Investigation Report text for the report originally dated March 29, 2000. The comment letter provided by USEPA was dated July 12, 2000. This response is provided within the 45 day time frame as provided in that letter.

Each comment and the associated response is provided below. The revised text and figures are attached. The revised text and figures can be supplemented into the three ring binder provided with the March 29, 2000 submittal.

Comment: **Section 2.3.4 Storage Tanks**

The discussion on page 8 describes a spill/release of Diesel fuel from a valve which occurred in 1983. The fuel released to the ditch located to the north of the refining area and was reportedly cleaned up under State supervision. At this time, this release does not appear to have been adequately defined or evaluated. Also, it is noted on Page 26 (Section 4.4.3 - Diesel Spill Soil Sampling) and Page 32 (Section 5.3.2 - Diesel Spill) that three samples "RDSB-1 through RDSB-3" were collected from this area and analyzed for a select list of constituents. The results of this sampling were reportedly presented in Appendix E, however these results were not found as indicated, nor were the results discussed within the text of the RFI Report. Revise the RFI Report to provide the requested data and to further evaluate whether this release is of concern and warrants additional action.

Response: AGC has revised the text in Section 4.4.3 and Figure 4-2 to provide additional information. The sample results were included in Appendix E, although under a different sample designation. As stated in Section 5.3.2, although the samples were collected in areas where the greatest impact from a spill would be expected, none of the volatile organic compounds and semi-volatile compounds analyzed were detected in these samples. Based on these results and the knowledge that the reported spill/release was remediated under the supervision of and to the satisfaction of the state no further evaluation is believed to be warranted.

Comment: **Section 3.5 Site Specific Hydrogeology**

Based on review of the boring logs, it appears that an additional perched zone(s) may exist at around 60 feet below ground surface (bgs), or deeper. This is noted by the use of the terms "Moist" or "Wet" in several of the boring logs, which are identical to those terms used to define the shallow aquifer at approximately 10 feet bgs. This zone also appears to be isolated from the uppermost semi-confined regional aquifer which is said to start at approximately 120 feet bgs. Revise the RFI Report to further discuss the potential presence of an additional perched zone which may be impacted by site conditions. It is noted in the RFI Report that the uppermost semi-confined regional aquifer does not appear to be impacted by facility operations, however the discussion should include a strategy for determining whether this middle perched zone has been impacted by site conditions.

Response: Section 3.5 has been revised to include a discussion of the middle perched zone. Data collected during the RFI indicates that the middle perched zone has not been detrimentally impacted from previous plant operations. Therefore, no further investigation of this horizon is deemed necessary.

Comment: **Section 4.2.4 Well Development**

Page 31 of the RFI Work Plan calls for wells previously installed at the facility to be inspected to determine the integrity prior to sampling. The results of the inspection may have been reported in the field logbook, as indicated on Page 22 of the RFI Report, but they should also be detailed in the RFI Report. Describe the procedures used to evaluate the integrity of those wells, the results of the assessment, and any additional steps taken to verify or assure well integrity prior to sampling these wells. Since the well integrity may have been in question, it may have been beneficial to re-develop the wells to ensure quality results, especially since the use of the low-flow technique would not likely have

impacted groundwater along the entire screened length of the well. (Also see comments on Recommendations section)

Response: Table 4-2 has been generated to detail the condition of existing on-site wells. Wells were visually inspected and "sounded" with a depth to water probe prior to sampling.

Comment: **Section 4.3.1 Well Evacuation**

The text states "Based on results of sampling, the collected water was managed with the site storm water runoff." It is unclear if the purged water samples were analyzed. If the purged water samples were analyzed, the results were not included in the report. If the results exist please provide them.

Response: The contents of the purge water drums were not analyzed, the groundwater samples collected subsequent to purging were analyzed. These results were then used to determine the proper disposal of the contents of the purge water drums. The text of Section 4.3.1 has been revised to clarify this.

Comment: **Section 6.1 Groundwater**

The text states that lead was only detected at total concentration at MW-2 and MW-6 and was not detected at dissolved concentration, conversely that the dissolved lead concentration most likely represent groundwater condition at the facility. To avoid any misconception regarding the applicable protection standards to groundwater collected at RMC. We refer RMC to U.S. EPA drinking water standards (SWDA), Section 1412 (b) (4). The applicable protection standards are MCLs when established by U.S. EPA. MCLs are based upon unfiltered (totals) groundwater data.

Response: The only sample analyzed for dissolved content was MW-6S because the well could not be sampled via low flow techniques and because the unfiltered samples contained visual suspended solids. If possible, MW-6S will be sampled using a low flow sampler and analyzed only for total constituents. If only a bailer can be used then sound judgement warrants analysis for total and dissolved constituents. The reference contained in the comment is noted.

Comment: **Section 7.0 Conclusions**

Groundwater

We agree with bullets #4 and #5 that the uppermost regional semi-confined aquifer may not have been impacted by hazardous constituents as reflected in current groundwater data, and that groundwater flow in the shallow zone appears to be to the groundwater flow in the shallow zone appears to be to the southeast. The current groundwater data does conclusively show that the perched groundwater underlying the facility has been impacted. However, we continue to have serious concerns regarding the adequacy of the current groundwater monitoring system in light of the recent analytical results. For example, given the location of the most significant impact to soil, it does not appear that there are sufficient number of monitoring wells capable of detecting releases to shallow groundwater. The phase II proposal should include a plan for installation of additional monitoring wells in locations with significant soil impact. These additional wells should be capable of detecting release to shallow groundwater. Also see comment on Section 3.5 above. Also, we disagree with the statements in bullets #1 and #3. Based on our review of the data in Appendix C, chromium is also a constituent of concern (COCs). Lead and arsenic are not the only COCs. Chromium potentially is a problem in MW-6 regardless of the fact that chromium concentrations were qualified as estimated in the September sampling episode. Chromium was detected at 7.7 ug/l in the same well as published in the December sampling results.

Response: The Recommendations section of the report has been modified to propose the addition of two monitoring wells immediately north of the paved area of the facility, this will provide coverage of an area which is shown to be down gradient of the area of the site that was most heavily utilized during operations and indicated the highest soil lead concentrations. One shallow upgradient well will also be proposed. At the request of USEPA, chromium will be added as a potential constituent of concern in site groundwater based on the chromium concentration of 7.5 μg/L in Well MW-6S; however, Table 5-1 does not list a PRG for chromium and the USEPA drinking water MCL is 100 μg/L for chromium indicating chromium is not an issue in groundwater.

Comment: **8.2 Groundwater**

The boring logs provided in Appendix A identify each deep boring with an "MW", even if these borings were not ultimately converted into Monitoring Wells. This is confusing as the RFI Report does not consistently or clearly

identify well locations with an "S" or "D" indicator which might help to clarify what locations are wells, or simply just deep borings.

Also, Appendix A includes several sheets that appear to be sparsely detailed subsurface logs for several borings that are simply identified as "Hole 1", "Hole 2", "Hole 3", "Hole 4" and "Hole 5". It is assumed that these refer to earlier well installations but this should be clarified in the text, and their location shown on a figure. Provide additional discussion on the relevance of these logs and, if applicable, ensure that their location is identified on the figures and any applicable analytical data is identified as such. Finally, Figure 2-2 in the draft RFI report shows a different location for MW-3 from the MW-3 location represented in the closure plan. The report should be revised to provide the accurate location for MW-3.

Response: Each of the deep borings was performed with the expectation of encountering a water bearing horizon at depths that would warrant construction of a well and therefore the exploratory holes were identified in the Work Plans and during the field investigation with the prefix of MW. However, as noted in the text and on the boring logs several of the holes did not encounter a water bearing zone and were therefore not constructed as wells. Because the field notes were written with the MW prefix, these holes retain that designation and the logs clearly indicate that no well was constructed. To help avoid confusion, the legend on Figure 4-1 has been expanded to provide a more detailed explanation.

Relative to the designation of "S" on the original site wells, it was decided that it would be clear that when no deep well was present that the well represented the shallow aquifer. This note has been added to Figure 4-1.

Regarding the boring logs provided in Appendix A, these represent the available information for the original wells. A discussion of the information provided in the wells is contained within the discussion of site specific hydrogeology presented in Section 3.5.

The location of all the monitoring wells, including MW-3 was surveyed during implementation of the RFI. The location presented in the RFI Report and the Closure Investigation Report represent the correct location as determined during that survey.

Comment: **Section 8.3 Soils**

We conclude from reading Section 2.5.1 of the report that the regional

background lead concentration is 30 ppm. However, the report also described instances where surficial background lead concentrations have exceeded 1,000 ppm. The report did not explain how the current onsite/offsite soils data will be compared to these reported background levels.

Based on the current data, we agree that the degree and the nature of contaminants detected in the onsite, offsite soils and in the groundwater resulted from the long history of hazardous waste management activities at the RMC facility. However, Refined Metals currently recommends no additional on-site soil sampling be performed in Phase II of the RFI. The report does not fully discuss the next steps, if any, that are planned or required to further investigate (i.e., define the extent of contamination) the soils, or to determine whether interim or corrective measures might be warranted.

It is understood that Refined Metals proposes to prepare a Phase II RFI Work Plan to further investigate the site, however U.S. EPA cannot evaluate whether the Phase II RFI Work Plan will be adequate (for soils) if an indication is not provided regarding those areas or media that may be included in the Phase II RFI, or whether the soils throughout the entire site, and offsite, would be evaluated for potential interim or corrective measures. Revise the RFI Report to discuss the expected future activities regarding the soils at the site.

Response: The information regarding the typical regional geologic background value provided in Section 2.5.1 was provided for general information purposes only. Consistent with discussions between the USEPA, IDEM and Refined Metals during preparation of the RFI and Closure Work Plans, soil sampling would extend off-site to 400 ppm. The text has been revised to indicate that the 400 ppm screening level dictates the planning for subsequent sampling activities (i.e., Phase II RFI) for off-site. 1,000 ppm will be retained as the on-site screening level.

The relevance of the "background soil samples" is questionable because of the results which exceed anticipated anthropogenic background concentrations. The discussion in the RFI Report text is intended to convey this concern. Once again, applicability of background is believed to be irrelevant because the investigation is being driven by the 400 ppm lead in residential soil screening level.

Phase II RFI soil sampling activities are expected to consist of sample collection from areas west and north of the RMC property. The precise number and location will be determined during the Phase II RFI Work Plan preparation process.

Comment: **Recommendations**

Although we agree that a phase II investigations to collect additional samples at the facility is warranted, we disagree with the basic tenant in your groundwater investigations conclusion which appears to be based on the assumption that the obtained totals results are flawed. It is your belief that by exploring the differences between the totals and dissolved results in future groundwater analysis, it could be proven that the dissolved results most likely represent groundwater conditions at the facility. All future groundwater samples collected in the phase II must be analyzed for total lead, arsenic and chromium.

Also, you have not established groundwater background levels for the COCs at the facility. Based on the potentiometric maps, MW-1 and MW-2 may represent true upgradient locations, however, the nature of the groundwater samples retrieved from these monitoring wells may not represent true background conditions at the RMC facility. As was indicated in the U.S. EPA's June 3, 1999 letter to you, MW-1 and MW-2 were constructed in areas that contain hazardous wastes and earlier analytical results have shown that they have been contaminated with lead and arsenic. The report should be revised to include future plans to establish background levels as may be necessary for comparison purposes. It is the U.S. EPA's position that it is unable to compare the results of all hazardous constituents detected in all onsite monitoring wells to those that may be occurring naturally.

Response: AGC and RMC maintain the position that total results for the inorganics being analyzed are not representative of actual groundwater conditions when the samples are not collected using low flow sampling techniques. Future sampling that can not be completed using low flow will be analyzed for BOTH total and dissolved constituents. The representativeness will be pursued further as a clearer correlation can be developed.

An upgradient well is being added as a recommendation in Section 8.0. This will provide a clearer indication of the suspected regional background conditions for arsenic.

Comment: **Section 8.4 Sediments**

The proposal to perform site reconnaissance and determine potential offsite impact is somewhat flawed because a visual inspection can not be used to fully

characterize the extent of contamination within any medium. The phase proposal II should include the following:

a) A detailed plan show areas identified as potential areas to be sampled;

b) Reasons for identifying these areas as such;

c) Number of samples to be collected from each location;

d) Intended use of the data collected and

e) Why certain offsite areas are eliminated from the sampling plan

Response: The proposed Phase II Work Plan will be developed considering the items listed in this comment.

We trust this letter and the associated changes to the report adequately address your comments. RMC is prepared to begin preparation of the Phase II work plan following your notice to proceed and anticipate that the Phase II Work Plan can be completed within 30 days.

If you have any questions, please call.

Sincerely,

ADVANCED GEOSERVICES CORP

Paul G. Stratman, P.E.
Senior Project Consultant

PGS:vm

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 12 2000

REPLY TO THE ATTENTION OF:

DE-9J

Matthew A Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

RE: RCRA Facility Investigation Draft Report Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the March 29, 2000 RCRA Facility Investigation (RFI) Draft Report for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana. The draft RFI report is disapproved.

Although two levels of investigations have been conducted at the facility, results from these investigations have not fully established the true extent of contamination. Therefore, as you have indicated in the report, we are encouraged that RMC proposes to prepare a phase II RFI work plan to further investigate the site. Included in the attachment to this letter, you will find comments to specific sections of the report and the additional investigations that must be completed prior to finalizing the RFI report. Therefore, within 45 days of receipt of this letter and attachment, the draft RFI report should be revised to address all of the comments, modifications and recommendations in the attachment.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga

Jonathan Adenuga
Corrective Action Section
Enforcement and Compliance Assurance Branch

cc: John Koehnen
Doug Griffin, IDEM
Rebecca Joniskan, IDEM

ATTACHMENT

Section 2.3.4 Storage Tanks

The discussion on page 8 describes a spill/release of Diesel fuel from a valve which occurred in 1983. The fuel released to the ditch located to the north of the refining area and was reportedly cleaned up under State supervision. At this time, this release does not appear to have been adequately defined or evaluated. Also, it is noted on Page 26 (Section 4.4.3 - Diesel Spill Soil Sampling) and Page 32 (Section 5.3.2 - Diesel Spill) that three samples "RDSB-1 through RDSB-3" were collected from this area and analyzed for a select list of constituents. The results of this sampling were reportedly presented in Appendix E, however these results were not found as indicated, nor were the results discussed within the text of the RFI Report. Revise the RFI Report to provide the requested data and to further evaluate whether this release is of concern and warrants additional action.

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quality results, especially since the use of the low-flow technique would not likely have impacted groundwater along the entire screened length of the well. (Also see comments on Recommendations section)

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Section 7.0, Conclusions

Groundwater

We agree with bullets #4 and #5 that the uppermost regional semi-confined aquifer may not have been impacted by hazardous constituents as reflected in current groundwater data, and that groundwater flow in the shallow zone appears to be to the southeast. The current groundwater data does conclusively show that the perched groundwater underlying the facility has been impacted. However, we continue to have serious concerns regarding the adequacy of the current groundwater monitoring system in light of the recent analytical results. For example, given the location of the most significant impact to soil, it does not appear that there are sufficient number of monitoring wells capable of detecting releases to shallow groundwater. The phase II proposal should include a plan for installation of additional monitoring wells in locations with significant soil impact. These additional wells should be capable of detecting release to shallow groundwater. Also see comment on Section 3.5 above.

Also, we disagree with the statements in bullets #1 and #3. Based on our review of the data in Appendix C, chromium is also a constituent of concern (COCs). Lead and arsenic are not the only COCs. Chromium potentially is a problem in MW-6 regardless of the fact that chromium concentrations were qualified as estimated in the September sampling episode. Chromium was detected at 7.7 ug/l in the same well as published in the December sampling results.

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Section 8.3, Soils

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contamination) the soils, or to determine whether interim or corrective measures might be warranted.

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Recommendations

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b) Reasons for identifying these areas as such;

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d) Intended use of the data collected and

e) Why certain offsite areas are eliminated from the sampling plan

JUL 12 2000

Matthew A Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, PA 19612-4205

DE-9J

RE: RCRA Facility Investigation Draft
Report Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed the review of the March 29, 2000 RCRA Facility Investigation (RFI) Draft Report for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana. The draft RFI report is disapproved.

Although two levels of investigations have been conducted at the facility, results from these investigations have not fully established the true extent of contamination. Therefore, as you have indicated in the report, we are encouraged that RMC proposes to prepare a phase II RFI work plan to further investigate the site. Included in the attachment to this letter, you will find comments to specific sections of the report and the additional investigations that must be completed prior to finalizing the RFI report. Therefore, within 45 days of receipt of this letter and attachment, the draft RFI report should be revised to address all of the comments, modifications and recommendations in the attachment.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
Corrective Action Section
Enforcement and Compliance Assurance Branch

cc: John Koehnen
Doug Griffin, IDEM
Rebecca Joniskan, IDEM

EXIDE® CORPORATION

September 1, 1999

United States Environmental
Protection Agency - Region V
RCRA Enforcement Branch
77 W. Jackson Street, HRE-8J
Chicago, IL 60604-3590
Attn: Mr. Jonathan Adanuga

Re: Community Relations
Refined Metals Corporation
Beech Grove, Indiana

Dear Mr. Adanuga:

In accordance with the EPA-approved RCRA Facility Investigation Work Plan (Work Plan), attached is the list of individuals/entities to which Exide proposes to mail newsletters. Per the Work Plan, newsletters will be mailed to these individuals/entities on a semi-annual basis. With the exception of the Work Plan, no new information regarding the site in general and the RFI in specific, is available at this time. Therefore, Exide proposes to issue the first newsletter six months after the Work Plan was approved. We should have new information to share with the public at that time.

Please feel free to contact me at (610) 378-0874 should you wish to discuss any aspect of community relations.

Sincerely,

EXIDE CORPORATION

Matthew A. Love
Manager, Regulatory Affairs

Attachment

cc: Paul Stratman - AGC

645 Penn Street Reading, PA 19601
P.O. Box 14205 Reading, PA 19612-4205
610/378-0500
www.exideworld.com/power

Stephen Goldsmith
Mayor
200 E. Washington Street
Indianapolis, IN 46204

US Rep. Julia Carson
Room 441 A
46 E. Ohio Street
Indianapolis, IN 46204

Marion County Health Department
3838 N. Rural Street
Indianapolis, IN 46205-2930

Rep. Edmund Mahern
2707 Allen
Indianapolis, IN 46203

Sen. Patricia Miller
1041 S. Muesing Road
Indianapolis, IN 46239

Sen. Lawrence Borst
1725 Remington Drive
Indianapolis, IN 46227

Ethyle Bloch
Ind. Div. Izaak Walton League
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Ft. Wayne, IN 46819

Blake Jeffery
Dir. Enviro. & Energy
Indiana MFG Association
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Indianapolis, IN 46282-0002

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ISDH
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Indianapolis, IN 46206-1964

Evan Bayh
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380 Russell Senate Office Building
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John R. Bates
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Indianapolis, IN 46204

Tonya Galbraith
#728
150 W. Market Street
Indianapolis, IN 46204

Daniel Fogerty
Dept. of Natural Resources RM 274
Dir. of Historic Preservation
402 W. Washington
Indianapolis, IN 46204

School of Public & Enviro. Affairs
801 W. Michigan Street
Indianapolis, IN 46206

Richard Lugar
US Senate
306 Hart Office Building
Washington DC 20510

Joseph Kernan
Lt. Governor
333 State Capitol
Indianapolis, IN 46204

ADVANCED GEOSERVICES CORP. *"Engineering for the Environment"*

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Toll-Free: (888) 824-3992
Email: agc@agcinfo.com
Web Site: http://www.agcinfo.com

September 28, 1999 98-478-01

Mr. Jonathan Adenuga
Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

RE: Refined Metals Corporation
Beech Grove, Indiana
RFI Work Plan

Dear Mr. Adenuga:

This letter is being submitted to summarize a change in the sample collection process that was made during the implementation of the RFI Work Plan. The change occurred in the soil sample collection methods where it was necessary to core through concrete. This change was discussed and agreed upon during the implementation of the RFI and this letter is being submitted to document this change.

Where it was necessary to penetrate a concrete or asphalt barrier to obtain soil samples, a geoprobe unit was determined to be the best method to penetrate these barriers and to minimize the possible transport of contaminants in the soil during the sampling collection process. Conventional industrial coring machines make use of water as a lubricant and coolant to penetrate concrete. This addition of water to the sampling location resulted in water pooling in the borehole. An alternate method of penetrating the concrete was considered necessary because of the addition of water to the boreholes may allow for the potential transport of surface contaminants downward through the soil column that was to be sampled. A geoprobe uses direct push methods to penetrate the soil. The entire soil column is preserved in a disposable acetate sleeve inside of the geoprobe sampling rod. The sleeve is cut along its length, and the sample is removed from the specified interval using a disposable scoop or stainless steel spoon.

The soil samples were collected at the intervals specified and were collected as stated in the RFI Work Plan. The use of a geoprobe for soil sampling in areas beneath concrete or asphalt reduced the potential for downward transport of contaminants during sampling.

Mr. Jonathan Adenuga
98-478-01
September 28, 1999

If you have any questions, please call Paul Stratman at (610) 558-3300 or Matthew Love at (610) 378-0874.

Sincerely,

ADVANCED GEOSERVICES CORP

Edie M. Gair, P.G.
Senior Project Geologist

Paul G. Stratman, P.E.
Senior Project Consultant

EMG:PGS:vm

cc: Matt Love
Robert Steinwurtzel, Esq.
Becky Eiffert

DE-9J

AUG 17 1999

Mr. Matthew A. Love
Manager-Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, Pennsylvania 19612-4205

Re: RCRA Facility Investigation Workplan
and Quality Assurance Project Plan
Refined Metals Corporation
Final Approval
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the revised July 7, 1999, addendum to the conditionally approved RCRA Facility Investigation (RFI) Workplan (WORKPLAN) and Quality Assurance Project Plan for the Refined Metal Corporation facility in Beech Grove, Indiana.

The U.S. EPA provides you with a final approval of the WORKPLAN. As you have indicated, field activities will begin on or before August 21, 1999. Based on the implementation work schedule, the draft RFI report is due in November 1999.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
Illinois/Indiana Section
Enforcement and Compliance Assurance Branch

cc: Doug Griffin, IDEM

bcc: Author's copy
Section Copy
Branch Copy
DE-9J/JA:be/8/12/99/filename:A:RFIPLN2.WPD

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
8/12/99					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
J.O.A 8/12/99					

DE-9J

JUL 29 1999

Mr. Matthew A. Love
Manager, Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, Pennsylvania 9612-4205

Re: RCRA Facility Investigation Workplan and
Quality Assurance Project Plan
Refined Metals Corporation
Conditional Approval
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed reviews of the revised March 3, 1998, RCRA Facility Investigation (RFI) Workplan (WORKPLAN) and Quality Assurance Project Plan (QAPP) for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana.

The U.S. EPA is providing you with a conditional approval of the WORKPLAN contingent on RMC providing the necessary modifications provided in the attachment to this letter. The QAPP is approved and needs no revisions.

In the enclosed attachments, you will find specific comments and modifications that must be made prior to the final approval of the WORKPLAN.

Therefore, in accordance with the August 31, 1998, Consent Decree, within 30 days of receipt of this notification of conditional approval, RMC shall revise the WORKPLAN to meet all the necessary revisions and submit them for review and approval.

Also, according to the RFI implementation schedule, RMC will commence implementation of the WORKPLAN within 15 days after its receipt of the approved revised WORKPLAN.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
Corrective Action Project Manager
Illinois/Indiana Section
Enforcement and Compliance Assurance Branch

cc: Doug Griffin, IDEM

bcc: Section copy
Branch copy

DE-9J/JA:be/5/19/99/filname:rfipln.app

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
7/27/99					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
J.O.A 7/28/99					

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF
DE-9J

JUL 29 1999

Mr. Matthew A. Love
Manager, Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, Pennsylvania 9612-4205

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Jonathan Adenuga
Corrective Action Project Manager
Illinois/Indiana Section
Enforcement and Compliance Assurance Branch

cc: Doug Griffin, IDEM

ATTACHMENT 1

Section 3.5.2, Site Hydrogeology & Section 5.2.3.2, Groundwater Evaluation

We agree that groundwater evaluation could be conducted in a phase approach. However, the initial phase of the evaluation must include adequate characterization of the underlying geological units. Therefore, this first phase should include collection of data from deep borings to enable accurate prediction and interpretation of the flow regime beneath the facility.

The text in both sections presumes the existence of a local perched zone of saturation in the glacial till which does not appear to follow the regional flow pattern. Regardless of the cited geological literature indicating the presence of a semi-confined aquifer located miles away from the facility, RMC does not have any other physical data to support either the presence of this semi-confined aquifer or the absence of a connection between it and the local perched zone at the facility. Since RMC did not provides the necessary information to support the claim that the local perched zone is the geological unit to be investigated, these two sections must be revised to include a proposal for deep monitoring wells installation and the characterization of the underlying geological units.

Appendix D, Community Relations Plan

We disagree that only the owners of the two parcels in close proximity to the facility are considered in the Community Relations Plan. The owners of the two parcels do not constitute the entire community. As the title to this document indicates, the objective is to fully disseminate information about the RFI at the facility to the community that potentially could have been impacted or within reasonable distance. Therefore, the plan must be revised to incorporate items a, b and c of U.S. EPA's comments to the August 1998 draft Community Relations Plan.

DE-9J

JUN 03 1999

Mr. Matthew A. Love
Manager, Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, Pennsylvania 9612-4205

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Quality Assurance Project Plan
Refined Metals Corporation
Conditional Approval
IND 000 718 130

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If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
IL/IN Section
Enforcement and Compliance Assurance Branch

cc: Doug Griffin, IDEM

bcc: Section copy
Branch copy

DE-9J/JA:be/5/19/99/filname:rfipln.app

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
BE 5/19/99					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
J.O.A 6/1/99					

ATTACHMENT 1

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Appendix D, Community Relations Plan

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ATTACHMENT 1

COMMENTS TO RFI WORKPLAN

Section 2.3.1, Smelting, Page 7, Paragraph 2.

This paragraph states that the lagoon would occasionally "overflow and drain off-site towards the east." In addition, it is noted that "some drainage from the active manufacturing area flowed uncontrolled toward the north." The RFI Work Plan needs to specifically address such areas. These areas should be evaluated and appropriate soil or sediment sampling be proposed to determine the extent of any potential contamination.

Section 3.3, Surrounding Land Use.

According to Exhibit B of the Consent Decree, Task 1, description of the current condition of the facility requires that certain relevant information be provided. For example, Section A.1.b of Task 1 requires that maps showing surrounding land use, must clearly depict property lines with the owners clearly indicated. Figure 3-1 of the draft RFI workplan does not clearly show any residential property lines either directly north or northeast of the facility boundary that could be impacted by the facility operations.

Figure 3-1 depicts what appears to be a flow path from the lagoon to the edge of the property along a facility road. The figure does not show where the flow goes from the edge of the property. In addition, several documents within Attachment 1 state that surface water periodically collects in the northeast corner of the site, however, the text and figures in the RFI Work Plan do not include details of this area. Complete surface water information is necessary to determine contaminant pathways on and off the RMC property. Revise the RFI Work Plan to include a full description and appropriate figures and maps of surface water runoff/drainage patterns on and off the property.

Also, Figure 3-1 and the text included under Section B.1.C of Task 1, do not identify nor provide any information on residential wells within one half mile radius of the facility. FMC must provide this information if available.

Section 3.5, Regional Hydrogeology, Page 18.

Information on the site's Regional Hydrogeology is missing. This information is necessary to develop a complete conceptual model of the site. The RFI Work Plan does not provide any groundwater elevation data or maps showing groundwater flow direction for the on-site wells. Graphical presentation of the flow direction of the shallow groundwater at the site is crucial in assessing what groundwater flowpaths exist near the site, and what downgradient receptors might be impacted. Revise the RFI Work Plan to include available water level data for on-site wells and any available data for nearby wells.

The Hydrogeology section should also include a more complete description of all aquifers that occur near the site that could be impacted by site activities. It is unclear from the description of regional aquifers if the sand and gravel glacial outwash aquifer is actually found near the RMC site and at what depth. It is also unclear what the thickness of the shallow aquifer is at the RMC site and whether any true aquifers (excluding a reported perched water table at approximately 10' bgs) exist between the shallow groundwater and the uppermost semi-confined aquifer at approximately 120' bgs. Provide additional information about the site hydrogeology and any aquifers in the vicinity of the site.

4 **Section 4.2, Discussion of Source Areas.**

The discussion on paved versus unpaved areas of the facility is somewhat confusing. According to the text in Section 2.1 of the draft RFI workplan, the facility occupies approximately 24 acres of which 10 acres constitutes the active manufacturing area. It is unclear if the remaining 14 acres represents the surrounding ground surface that is currently paved. FMC must provide a map that clearly show the aerial extent of the paved surface including the locations of the outdoor waste piles before and after the areas were paved.

The text also discusses storage of materials on unpaved surfaces, spillage in a baghouse, and runon/runoff control for outdoor waste piles. As stated in the section's conclusion, "Based on original facility grading, transport and deposition of lead bearing sediment from the facility could have occurred at the edge of paved areas northeast and east of the Breaker building...." It is not clear from the discussion, if the unpaved areas northeast of the production areas are not potential sources of contamination.

The text also discussed a 1983 oil spill cleanup under the state supervision. However, there were no supporting documents for this cleanup. FMC should provide any documentation of oil spill cleanup as an attachment to the revised document on current condition. If this cannot be documented, the RFI Work Plan should include sampling of the spill area soils and any surface water or sediment present where the release occurred.

Section 4.6, Groundwater

Based on the configuration of the current groundwater monitoring wells as depicted in Figure 1-2 of the draft RFI workplan, it appears that MW-1 and MW-2 were constructed in areas that contain hazardous wastes. Also a review of analytical results from these two monitoring wells show that they have been contaminated with lead and arsenic. MW-1 and MW-2 have been designated as upgradient monitoring wells by the facility. Given that there is evidence of at least some impacts to groundwater, it may be necessary to place additional wells in lower geological units to determine the extent of these impacts. In addition, since the RFI Work Plan purports the presence of relatively high concentrations of naturally-occurring metals, a true background well must be installed to verify this assumption. It does not appear that any of the currently installed wells could be considered adequate for this purpose. At this point we believe it is premature to designate an upgradient well without accurately determining the groundwater flow direction at the facility.

In order to evaluate groundwater quality at a facility, it is imperative that the groundwater retrieved from upgradient monitoring wells at a facility should be of such quality that it has not been impacted by the facility operations. Based on the factors discussed, MW-1 and MW-2 would not be considered true upgradient monitoring wells.

Section 5.2.1, Groundwater

The groundwater evaluation proposal in this text is inadequate. As we have indicated above (Section 4.6), several shortcomings have been identified with the existing groundwater monitoring system at the facility. Apart from collecting depth and water level measurements and development of potentiometric surface maps, there is no proposal to accurately define the aquifer system beneath the facility. It was assumed in Section 3.5 that groundwater at the facility is <u>likely a perched aquifer.</u> Rather

than assuming, a more definitive description and conclusion regarding this geological unit must be provided. The proposal should be revised to include the following information at a minimum:

a) Replacement of MW-1 and MW-2 with true upgradient wells that have not been affected by the facility operations;

b) Installation of additional cluster monitoring wells that provide adequate coverage of all waste piles and onsite solid waste management units (SWMUs).

Referring to Figure 4-4 of the draft RFI workplan, we recommend cluster wells at these locations: (1) one cluster well in the vicinity of the existing production well, (2) one cluster well east of soil sample location **"N"**, and (3) one cluster well southeast of soil sample location **"A"**.

The text also states that groundwater samples collected will be analyzed for totals and dissolved lead, arsenic, antimony and cadmium. RMC must provide justification for the abbreviated analytical parameter lists and why no organic analyses are proposed regardless of the documented diesel oil releases at the site. In addition, justification must be provided for analyzing dissolved metals in the collected groundwater samples.

Finally, revise the proposed analyses for all media to include all potential contaminants of concern in each area. For example, areas where an acid spill may have occurred should be sampled for the full suite of metals to determine if metals in the soil were mobilized due to the acid spill. Also, note that if volatile organic compound (VOC) samples are to be collected, the field sampling procedures should not call for homogenization of the samples.

Section 5.2.3.1, Pg. 33, Well Evacuation.

The text seems to imply that the existing monitoring wells may have problems with yielding adequate volume of groundwater for purging and consequently for collection and analysis. Monitoring well MW-1 was the only well specifically identified with the potential of having insufficient volume of groundwater. Since this subject matter was not discussed in relation to the remaining monitoring well, it is not clear if this problem may be persistent in all of the existing monitoring wells. The revised RFI workplan should address this issue. Also, the revised workplan must justify the use of bailers at some wells over the low flow method proposed for retrieving groundwater samples.

Section 5.3.1, Pg. 35, Onsite Soil Sampling.

Much of the soil sampling data collected up to this point has consisted of X-Ray Fluorescence (XRF) data. We consider XRF a good screening tool. Air dispersion of dust or smaller particles from the outdoor waste piles may have been a significant pathway for contaminant migration based on assessment of the previous exposed piles of lead-contaminated dust and other wastes. A discussion of the prevailing wind directions and, if available, a wind rose should be provided. This information should be used to identify the most likely directions of surface soil contamination and the most appropriate sampling locations. All future analytical data must be collected from areas where releases have occurred to accurately define the extent and magnitude of contamination.

Furthermore, in areas where prior sampling results have indicated contamination at depths of 24" or greater, additional samples should be proposed at depths greater than those previously showing contamination. Since the contaminants of concern in soils at the RMC site include metals, background samples need to be collected for soil to establish background concentrations of metals. These samples should be collected in areas not impacted by site activities, at off-site locations, if necessary. Revise the RFI Work Plan to include background soil samples for all potential inorganic contaminants of concern.

In addition, the text states that samples will be collected from several soil piles. Not only did the text not provide the rationale for sampling these soil piles, it also did not provide the rationale for selecting other soil sampling locations. Figure 5-1 depicting the soil sampling locations does not include the location(s) of these soil piles. Therefore, U.S. EPA is unable to evaluate the adequacy of the proposed sampling locations. Revise the text and Figure 5-1 to include these soil piles and the locations were samples will be collected and the rationale for selecting the sampling locations. Referring to Figure 5-1, we recommend that additional soil samples should be collected from the following areas: (a) The area south between sample location "A" and "O1", (b) The area directly south of the warehouse, and © The area west and directly north of sample location "O5". Revise the RFI workplan to address all of the above issues.

Section 5.3.2, Off-site Soil Sampling

In addition to the proposed off-site sampling locations, RMC must

include a proposal to collect soil samples from the northeast end of the facility boundary and from a series of mounds (approximately 2-5 feet wide and 6 feet high) in the vicinity of the air monitoring station along Arlington Avenue.

Section 5.4.2, Interior Sampling

The proposed interior sampling strategy is unacceptable. We note that the battery breaker, furnace/refining buildings and the warehouse were eliminated from further investigations. In addition, we do not believe that it is necessary to confirm the sampling results of the analysis of floor dust collected from the material storage building in 1966 by ENTACT. Rather, RMC should propose additional sampling locations to those locations shown in figure 5-2. Finally, based on the prior ENTACT sampling results and the history of operations at the facility, RMC should propose a sampling strategy for the investigation of subsurface soil samples to be collected from the battery breaker building, furnace/refining buildings, the areas were battery acid was released, and the spill areas in close proximity to the "truck turnaround"

We note in general terms that although the draft RFI workplan discusses sample collection from several areas of the facility, there was no field sampling plan describing in detail sampling and associated field procedures to be followed during the investigation. A separate and distinct document titled "Field Sampling Plan for the Refined Metals Corp." should be included in the revised RFI workplan. To avoid repetition of what might have been included in the Quality Assurance Project Plan (QAPP), the plan should include detailed description of items such as summary table showing number of samples from each hazardous waste management units, SWMUs, matrix, laboratory parameters, total number of samples, sampling procedures, sampling equipment, field sample designation system, etc.

Appendix A, Project Management Plan

As required in Exhibit B of the Consent Decree, Task III of the RFI Workplan consists of (5) elements; Project Management Plan, Quality Assurance Project Plan (QAPP), Data Management Plan, Health and Safety Plan and Community Relations Plan. Appendices A, C and D of the RMC draft RFI Workplan based on our evaluation were submitted to address the Project Management Plan, the Health and Safety Plan and the Community Relations Plan. We have determined that the Data Management Plan was not included in this submittal. This element of Task III must be included in the revised RFI Workplan. Furthermore, Figure A-1 of Appendix A shows U.S. EPA and IDEM Project Coordinators reporting to the RMC Project Manager. This figure should be revised.

Section 5.5, Sediment Sampling

A discrepancy between the RFI Work Plan and the QAPP was also found. Section 4.3.1 of the QAPP states that sediment samples will be collected from a depth of 0" to 6". Section 5.5 of the RFI Work Plan states that sediment samples will be collected from depths of 0" to 6" and 6" to 12" bgs. Revise the RFI Work Plan and/or QAPP to resolve this discrepancy.

Appendix D, Community Relations Plan

Section 5.2.1, Document Repository

The text states that RMC will provide all documents generated during the RFI to the public library for review for 180 days. We suggest that in addition to the public Library, the following features of a Community Relations Plan should be provided:

A) Development of a mailing list of key citizens and interested parties and surrounding property owners. For example, the Marion County Health Department and the IDEM should be included in this list;

B) Written/mail-in surveys of the parties listed on the mailing list to confirm that information is being communicated to the interested public and to monitor community concerns with the site, and

C) Information bulletins to be distributed to parties listed and to be published in a local newspaper.

Section 5.2.2, Public Meeting

The U.S. EPA must be notified within 15 days of any planned public meeting. The notification should include location of the meeting, time, date, purpose and agenda.

EXIDE® CORPORATION

VIA AIRBORNE EXPRESS

March 3, 1999

Mr. Jonathan Adenuga
United States Environmental
Protection Agency - Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: RCRA Facility Investigation Work Plan Revision Certification
Refined Metals Corporation
IND000718130

Dear Mr. Adenuga:

Under separate cover, Advanced GeoServices Corporation is submitting to you an amended RCRA Facility Investigation Work Plan dated March 3, 1999 which has been revised in response to the EPA's comments dated December 18, 1998. I certify under penalty of perjury that the information contained in or accompanying this revised RCRA Facility Work Plan is, to the best of my knowledge after thorough investigation, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

EXIDE CORPORATION

Matthew A. Love
Manager, Regulatory Affairs

cc: Paul Stratman, AGC

645 Penn Street Reading, PA 19601
P.O. Box 14205 Reading, PA 19612-4205
610/378-0500
www.exideworld.com/power

EXIDE® CORPORATION

February 3, 1999

Mr. Jonathan Adenuga
United States Environmental
Protection Agency - Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Analytical Parameters
Refined Metals Corporation RFI
IND000718130

Dear Mr. Adenuga:

This letter confirms our conversation on February 3, 1999 regarding analytical parameters for the RFI. As we discussed, Exide believes that some of the parameters requested in the EPA's comments on the RFI Work Plan are not warranted based on the history of the property, the operational history of the facility, and Exide's significant experience at other secondary lead smelters nationwide. However, Exide understands that the EPA cannot narrow the list of parameters without justification. To potentially narrow the list, you agreed to allow Exide to submit a document justifying Exide's position regarding RFI parameters. I committed to submit this justification to you early next week.

Because the scope of final revisions to the RFI Work Plan could vary widely depending on the parameters which are eventually selected, we agreed to resolve analytical parameters for the RFI before further revisions to the RFI Work Plan are made. You indicated that the current submittal deadline for the revised RFI Work Plan (February 11, 1999) would be suspended pending your review of Exide's justification and that you would issue a new submittal deadline after you reviewed the justification. Please contact me your understanding of our conversation differs from that presented above.

Sincerely,

EXIDE CORPORATION

Matthew A. Love
Manager, Regulatory Affairs

cc: Paul Stratman

645 Penn Street Reading, PA 19601
P.O. Box 14205 Reading, PA 19612-4205
610/378-0500
www.exideworld.com/power

EXIDE® CORPORATION

January 27, 1999

Mr. Jonathan Adenuga
United States Environmental
Protection Agency - Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Submittal Deadline for RFI Work Plan Revisions
Refined Metals Corporation
IND000718130

Dear Mr. Adenuga:

This letter confirms the submittal deadline extension you granted for the RFI Work Plan revisions. The original submittal deadline was January 27, 1999. However, availability constraints of applicable EPA personnel to answer questions regarding EPA comments on the QAPP necessitated an extension to this deadline. During our conversation on January 27, 1999, you granted an extension to February 11, 1999. Please contact me if this letter misrepresents the extension you granted.

Sincerely,

EXIDE CORPORATION

Matthew A. Love
Manager, Regulatory Affairs

cc: Paul Stratman

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P.O. Box 14205 Reading, PA 19612-4205
610/378-0500
www.exideworld.com/power

MARION COUNTY
HEALTH DEPARTMENT
making a difference

December 10, 1998

Jonathan Adenuga
U.S. Environmental Protection Agency
RCRA Enforcement Branch
77 W. Jackson St., HRE-8J
Chicago, IL 60604-3590

Re: RCRA Facility Investigation Work Plan
Refined Metals Corporation
Beech Grove, Indiana

Dear Mr. Adenuga,

Upon review of the Refined Metals Corporation (RMC) Site Work Plan we submit the following comments for your review.

In general, we would like to request that all on-site and off-site samples of soil, sediments and groundwater be analyzed for all the RCRA metals. Many if not all of these metals are often associated with secondary lead smelters. In addition, antimony was used as an on-site material and arsenic was detected above the MCL in MW-3 on March 27, 1992 and MW-5 on June 13, 1992, as stated in section 4.6 of the Site Work Plan.

In reference to section 5.3.1 we would ask for an explanation on the use of a 100-foot grid to guide soil-sampling efforts, and in addition how were the 57 sample locations selected? From past experience with secondary lead smelters in Marion County a 50-foot grid was determined to be the maximum size allowable to sufficiently evaluate on-site contamination, with all grids being sampled. The current proposal of 57 sample locations leaves large areas of this approximately 24-acre site unevaluated.

In section 4-10, Potential Human Exposure, it is stated that "although there is a potential for releases over time to have caused accumulations of lead in soils, there are no analytical data to indicate an imminent danger due to soil contamination". The Marion County Health Department (MCHD) has conducted off-site residential soil sampling and found lead levels in excess of the 400ppm residential standard. For instance, eleven samples were taken at 3309 S. Arlington Ave. with a range of 134mg/Kg to 2060 mg/Kg of lead, and at 2961 S. Arlington Ave. four samples were taken with a range of 134 mg/Kg to 423 mg/Kg of lead. Presently 9.28 acres of vacant land is for sale directly northeast of the RMC site. This is of concern due to likely future development. We are concerned about the exposure risk to nearby residents and contractors during construction as well as future residents of the property. For these reasons, and the fact that RMC often had exceedences of their air permit, as documented by the Indianapolis Air Pollution Control Section we feel there is a threat to human health. Therefore, we believe off-site soil sampling for the RCRA metals should be included in the Work Plan to the east and northeast of the site in line with the prevailing wind direction of Marion County.

The MCHD also has concerns about the proposed off site sampling to the west of RMC. Given the high XRF readings at the property line we feel this sampling should be expanded to adequately address any off-site contamination.

3838 NORTH RURAL STREET
INDIANAPOLIS, INDIANA 46205
TELEPHONE (317) 541-2000

BUILDING HEALTHIER NEIGHBORHOODS

In response to the proposed sediment sampling in section 5.5 the MCHD would suggest all natural and constructed drainage systems around the site be sampled . This comment is based on two surface water samples collected by MCHD, off-site, to the east of the property on December 12, 1994. These samples revealed lead concentrations of .234mg/L and .775mg/L.

In conclusion, the MCHD would like to see a much greater emphasis put on the east and northeast of the property both on and off-site, as well as a more comprehensive analysis of samples to include all the RCRA metals. I hope we have provided enough data to support these comments but if you have any questions please feel free to call me at (317) 541-2280.

Sincerely

Shane Modglin
Environmental Health Specialist
Department of Water Quality and
Hazardous Materials Management

cc: Doug Griffin, Indiana Department of Environmental Management

MARION COUNTY HEALTH DEPARTMENT
making a difference

SHANE MODGLIN

ENVIRONMENTAL HEALTH SPECIALIST III
DEPARTMENT OF WATER QUALITY &
HAZARDOUS MATERIALS MANAGEMENT

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A DIVISION OF T[illegible]ND HOSPITAL CORPORATION OF MARION COUNTY

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

John M. Hamilton
Commissioner

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P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.ai.org/idem

October 8, 1998

Mr. Jonathan Adenuga HRE-8J
U.S. EPA, Region V
RCRA Enforcement Branch
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Refined Metals Corporation Site
Beach Grove, Indiana
IND 000718130

Dear Mr. Adenuga,

The Corrective Action Section has made a preliminary review of the RFI Workplan, and will withhold comments pending your review, but there is one issue that became apparent in IDEM's site visit of October 1, 1998 that is not clear in the RFI, and you should be aware of when doing your review. The concrete floor of the Battery Breaker building is heavily acid damaged, and there is a significant potential for acids with dissolved lead to have impacted the soil beneath the building. The Battery Breaker building is not being closed as a RCRA unit, but should be addressed as a SWMU. The RFI has no sampling proposed for inside the building.

Please contact Doug Griffin at (317) 233-2710 if he can help you in any way with the review, including visiting the site if you have specific questions that require observations or photos.

Sincerely,

Michael E. Sickels, Chief
Corrective Action Section
Hazardous Waste Facilities Branch
Solid and Hazardous Waste Management

EXIDE® CORPORATION

September 3, 1998

United States Environmental
Protection Agency - Region V
RCRA Enforcement Branch
77 W. Jackson Street., HRE-8J
Chicago, IL 60604-3590
Attn: Mr. Jonathan Adanuga

Re: United States v. Refined Metals Corporation, Civ. No. IP 90-2077-C

Dear Mr. Adanuga:

Pursuant to paragraph 64 of the consent decree entered August 31, 1998 in connection with the above captioned matter, this letter provides the USEPA notification that Refined Metals Corporation has designated Mr. Matthew A. Love of Exide Corporation as Project Coordinator. Contact information for Mr. Love is provided below.

Matthew A. Love
Exide Corporation
645 Penn Street
Reading, PA 19612-4204
ph: (610) 378-0874
fax: (610) 371-0463
email: mloveexide@aol.com

Very truly yours,

EXIDE CORPORATION

Matthew A. Love
Manager - Regulatory Affairs

cc: R. Steinwurtzel

EXIDE® CORPORATION

October 15, 1998

Mr. Jonathan Adanuga
U.S. Environmental Protection Agency
RCRA Enforcement Branch
77 W. Jackson Street, HRE - 8J
Chicago, IL 60604-3590

Re: RFI Work Plan
Refined Metals Corporation
Beech Grove, Indiana

Dear Mr. Adanuga:

In response to objections by the U.S. Environmental Protection Agency (EPA), Refined Metals agrees to withdraw Section 1.4 (Disclaimer) of the RCRA Facility Investigation Work Plan (Work Plan) dated August 27, 1998. Refined Metals will issue revised pages to the Work Plan which omit Section 1.4 along with other pages requiring revision once the balance of comments are received from the EPA.

Sincerely,

EXIDE CORPORATION

Matthew A. Love
Manager, Regulatory Affairs

cc: Rebecca Eifert - IDEM
Paul Stratman - Advanced GeoServices Corp.
Robert Steinwurtzel - Swidler & Berlin
U.S. Department of Justice

645 Penn Street Reading, PA 19601
P.O. Box 14205 Reading, PA 19612-4205
610/378-0500
www.exideworld.com/power

Matthew A. Love, Manager
Regulatory Affairs
Exide Corporation
645 Penn Street
Reading, Pennsylvania 19612-4205

Re: RCRA Facility Investigation Workplan
and Quality Assurance Project Plan
Refined Metals Corporation
IND 000 718 130

Dear Mr. Love:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the September 1 and 23, 1998, RCRA Facility Investigation (RFI) Workplan and Quality Assurance Project Plan (QAPP) for the Refined Metal Corporation (RMC) facility in Beech Grove, Indiana.

Based on our review, RMC's draft RFI Workplan with the incorporated QAPP is not approvable.

Included in Attachments I and II of this ~~he~~ enclosures to this letter are specific comments and modifications that we believe must be made prior to the approval of RMC's RFI Workplan and QAPP.

Therefore, in accordance with the August 31, 1998, Consent Decree, within 30 days of receipt of this notification of disapproval, RMC shall revise the draft RFI Workplan and QAPP to meet all necessary revisions and submit them for U.S. EPA's review and approval.

If you have any questions regarding this matter, please contact me at (312) 886-7954.

Sincerely yours,

Jonathan Adenuga
Illinois/Indiana Section
Enforcement and Compliance Assurance Branch

cc: Terry Uecker, TechLaw Inc.
Mike Sickles, IDEM

bcc: Branch File
Section File

DE-9J/JA:be/12/16/98/coverltr.rmc

ENFORCEMENT AND COMPLIANCE ASSURANCE BRANCH

SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY	SECRETARY
12/16/98					
AUTHOR/ TYPIST	MINN/OHIO SECTION CHIEF	MICHIGAN/ WISCONSIN SECTION CHIEF	ILLINOIS/ INDIANA SECTION CHIEF	ECAB BRANCH CHIEF	WPTD DIVISION DIRECTOR
J.O.A 12/18/98					